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THE TWENTY-THIRD YEARBOOK

OF THE

NATIONAL SOCIETY FOR THE STUDY
OF EDUCATION

PART II

VOCATIONAL GUIDANCE *and*
VOCATIONAL EDUCATION FOR THE INDUSTRIES

Prepared by /
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This Yearbook will be Discussed at the Chicago Meeting of the National Society; Section I, Saturday, February 23, 8:00 p. m.
Section II, Wednesday, February 27, 2:15 p. m.

PUBLIC SCHOOL PUBLISHING COMPANY
BLOOMINGTON, ILLINOIS
1924

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EDITOR'S PREFACE

In 1921 the Society published as its *Twentieth Yearbook, Part I*, the "Second Report of the Society's Committee on New Materials of Instruction." Among the various sub-committees which collected material for that report was one on "Industrial Arts Projects," headed by A. H. Edgerton. For various reasons it proved impracticable to incorporate the report of this committee in the *Yearbook* in question. Since that time the idea of issuing a report upon industrial education has grown and ramified to include other related phases of educational activity, particularly that of vocational guidance.

The present Part II of the *Twenty-Third Yearbook* is the fruit of this expansion of the original intent to gather projects illustrative of school work in the industrial arts. The result has been the compilation of a fairly extensive mass of material from many quarters, which ought to afford a fairly good picture of what is in the minds of those who are concerned now-a-days with vocational guidance and industrial education. Those who are actively engaged in this field will surely read this *Yearbook* with keen interest to discover what their fellow-workers are doing or planning to do. Those who are not actively engaged in this field, and who, at least in some cases, entertain more or less suspicion as to the merits of the whole movement, will, we trust, read the *Yearbook*, even if critically, to find out what the leaders in the movement advocate and why they advocate it.

To Mr. A. H. Edgerton belongs particular credit for gathering and organizing the material of the volume. The editor takes the responsibility for the final arrangement of the material.

GUY M. WHIPPLE.

FOREWORD

Recent requests for reliable information to assist boards of education and school officials in determining the relative possibilities of different plans for realizing common aims, or purposes, in vocational guidance and industrial education programs have made it evident that there is a growing interest in the self-comparison and self-improvement types of procedure. Ever increasing demands confront all public school systems which are seriously attempting to meet local needs for extending legitimate forms of educational service. The various advantages of such self-imposed inventory and readjustment from time to time are becoming obvious to conscientious school administrators and teachers.

The perplexing problems involved in meeting new and changing demands for different kinds and levels of educational opportunity, as well as certain honest differences in opinion concerning the validity of these requests for specialized, extended, and cooperative service, have forced a greater interest in educational and occupational diagnosis. Worth-while investigations and analyses have resulted from the gradual acceptance by school representatives of the working hypothesis that provisions for educational service should be based upon established facts, whenever possible, rather than chiefly upon more or less variable opinions. This same attitude was evidently possessed by Charles Dickens when he wrote "Far be it from me to affirm that what everybody says is true." Likewise to-day, that which nearly every person believes to be true, or just takes for granted because the majority has accepted it, often possesses some admixture of a falsehood which escapes detection for a long time because it gets wrapped up, labeled, and pigeon-holed as a "foregone conclusion."

This investigation clearly shows that the educational traditions, as well as these present-day needs, still quite largely determine the purpose, content, and method of the vocational guidance activities and the industrial education programs in a diminishing number of school systems. On the other hand, the suggestive reports of notable developments in 143 American school systems, which are presented in this *Yearbook*, are so many evidences of a serious attempt to prepare our pupils for efficient service and more intelligent citizenship.

The social and economic needs of to-day seem to call for provisions in instruction and guidance which aim (1) to challenge and develop the pupil's aptitudes and capacities and (2) to train and educate him for the many-sided demands which the future is expected to make upon him. These demands assume that all public school systems will attempt to provide curricula for aiding pupils who continue their school work to plan their programs more wisely in secondary and higher education, and also for helping those who

might find it advisable or necessary to leave school with a minimal amount of preparation to choose their respective procedure more thoughtfully. It is interesting to note that increasing numbers of teachers and administrators insist that no public school system is complete today unless it makes adequate provision for aiding each boy or girl in selecting a suitable occupation and preparing properly for it.

The rapid growth of intermediate and junior high schools in this country and the subsequent development of specialized curricula in a number of senior high schools, as well as in several separate vocational or trade schools, represent a serious attempt to assist all children, regardless of their social status or possible life work, in meeting these current and changing demands for many-sided service. This growing tendency to respect individual differences by providing varying degrees of differentiation during the secondary school period implies that pupils should be provided with the kinds and qualities of experience in knowledge and skill which will assist them in establishing those habits, attitudes, and appreciations that are found to contribute most to the daily conduct of worthy citizens, intelligent consumers, and efficient producers.

This opportunity is taken to thank the many teachers, counsellors, co-ordinators, placement officers, principals, supervisors, directors, superintendents, state officials, and other specialists who have so generously assisted in person, by questionnaire, and by letter in securing and interpreting data for the various comparative studies included in the introductory chapters for Section I on Vocational Guidance and Section II on Vocational Education for the Industries. It is also desired to express indebtedness to the teachers and administrators who have cheerfully co-operated by contributing valued reports of their experience in successfully developing local courses and programs, a number of which are acknowledged in the following chapters of this *Yearbook*. Especial acknowledgment is gratefully made to L. A. Herr of The Lincoln School, New York City; G. H. Hargitt of the Public Schools, St. Louis, Missouri; John M. Brewer of the Vocational Guidance Bureau, Harvard University; Frederick G. Bonser of Teachers College, Columbia University; J. C. Beswick of the California State Department of Industrial Education; Harry D. Kitson, of the Department of Psychology, Indiana University; Robert H. Rodgers of the Bureau of Teacher Training, Milwaukee, Wisconsin; Anthony Goldberger of the Continuation School, Pittsburgh, Pennsylvania, and James McKinney of the American School, Chicago, Illinois, for their able assistance in selecting and adapting designated sections of these reports dealing with problems of vocational guidance or industrial education.

A. H. EDGERTON.

SECTION I
VOCATIONAL GUIDANCE

CHAPTER I

PRESENT STATUS OF GUIDANCE ACTIVITIES IN PUBLIC SCHOOLS

A. H. EDGERTON

Teachers College and The Lincoln School, Columbia University

AND

L. A. HERR

The Lincoln School of Teachers College, New York City

After reading a considerable amount of current educational literature one might conclude that our modern public schools have little obligation for assisting adolescent and older boys and girls to choose wisely both educational opportunities and occupational pursuits. In this connection, it is a significant fact that *143 American cities recently reported varied attempts to provide organized educational and vocational guidance programs* in their respective school systems. However, it should be borne in mind that these reports represent existing tendencies in the more progressive public schools. Because of their conviction that practical guidance and school counseling are indispensable factors in the success of the whole school organization, such schools have ceased to limit the scope of their guidance activities to mere theoretical considerations, or even to incidental study and action. In these democratic school systems an analysis of present-day practices indicates clearly that there is a growing consciousness of the urgent need for having youths of twelve to fifteen years of age, and older, encouraged to acquire vocational knowledge and insight as a basis for judgment and choice. For these children, a public school education now includes a reasonable amount of information and perspective of relative occupational opportunities and employment requirements.

MODERN SCHOOLS RECOGNIZE INCREASING NEEDS FOR SYSTEMATIC GUIDANCE

For a number of years the demand for systematic guidance and counsel has not been lacking in large and small secondary schools. The urgent needs of pupils for choosing suitable schools, courses of study, and subjects of instruction, and also for gaining information about possibilities and conditions in selected occupations, have challenged our best teachers in modern schools to give limited individual and group advisement by means of interviews and conferences and through various school experiences. But until recently vocational guidance in the schools investigated was considered incidental rather than a definite and functioning part of the whole school organization. In fact, until a few years ago everyone in general and no one in particular had been charged with this two-fold responsibility (1) for *aiding individual pupils in choosing educational and vocational advantages*, and (2) for *imparting worth-while knowledge of occupational opportunities and employment requirements*. The results of such hit-or-miss practices usually have failed to provide a satisfactory basis for the proper classification of pupils, for the purposeful election of courses, for the intelligent choices of life callings, and for the most satisfactory adjustments in employment. In each one of the cases investigated it has been obvious that the success of the guidance program has depended not only upon the qualifications and the experience of those directly responsible for educational and vocational counselling, but also upon the adequacy of the provisions for collecting, interpreting, and using needed occupational data relating to industrial, commercial, agricultural, household, or professional callings.

It has been realized for some time that guidance activities are not to be considered a panacea for all educational and vocational ills. With the few exceptions which will be cited in the following pages of this study, it is insisted that the many complexities and changes due to social and economic developments practically demand that boys and girls no longer be required to base their important educational decisions and vocational choices and adjustments upon mere guesses and assumptions or even upon meager data. It is quite generally believed that any person must first know

something of the meaning of those economic facts, personal relationships, and relative values which are inherently related to this problem of selecting a suitable life career and preparing adequately for it, before a wise decision can be made; that otherwise one is prone to deal with opinion, with the too frequent result that he is influenced largely by incidental factors. As might be inferred, a large majority of these reports also indicate that each individual who decides to enter upon a specific training program, designed to prepare for a wage-earning occupation, also might well have acquired a reasonable basis for this choice as a result of some factual understanding of his own preferences and abilities.

As an outcome of these serious endeavors to meet current and changing demands for purposeful instruction and systematic guidance, it is found that marked increases in interest, ambition, and school attendance often follow the inauguration and development of suitable courses of study and their accompanying guidance programs. This is observed most frequently in schools which are attempting to meet the individual needs and capacities of the pupils in question. As many mistakes may result from misinformation and misdirection, counsellors, advisers, co-ordinators and teachers in increasing numbers are trying to overcome any practices which force unreliable information and unwarranted decisions upon youth. Several school systems are now attempting to furnish all pupils in junior and senior high schools, as well as those in continuation and preparatory classes and specialized vocational courses, with accurate knowledge concerning relative opportunities and requirements in the social, economic, and the larger personal aspects of important life callings. While it has long since been agreed that, if possible, children should be sufficiently well prepared in school so that they may exercise intelligent judgment in weighing values and in choosing their future courses of study and work, instances are being reported from a few cities in which the traditional curriculum is failing hopelessly to provide such concrete experiences and reliable knowledge as would help materially in making this possibility a reality.

On the other hand, wherever desirable occupational studies have been based upon actual facts and have received proper attention,

these have not only assisted the pupils in their choices and enriched the respective subjects and courses of study, but they likewise have contributed repeatedly to a more intelligent understanding of the different aspects of vocational life. This great need, and obligation, for assisting pupils with problems of an efficient choice, both as to self-expression and social service, suggests that, if possible, each pupil's decision should result from careful comparisons and reasoning based upon reliable information. Furthermore, this important decision preferably should be made as a result of some tangible evidence of the pupil's abilities and inabilities as well as his likes and dislikes. In other words, the educational needs of today seem to call for instruction and guidance which aim (1) to develop the pupil's general abilities and specialized capacities, and (2) to prepare him as far as possible for the demands which the future is going to make upon him.

CURRENT TENDENCIES IN VOCATIONAL AND EDUCATIONAL GUIDANCE PROGRAMS

During the past few years it has been generally accepted that an adequate program for educational and vocational guidance requires continuous and systematic counsel with children during their entire school attendance above the sixth grade as well as supervision of their early employment training and adjustment periods. Notwithstanding the desirability of having such complete provisions in the public schools, the reports pertaining to the 143 city programs indicate clearly that there is a wide difference in emphasis even in the few cities where such well-balanced guidance bureaus or departments now exist.

The relation existing between the size of these cities and the corresponding provisions for occupational studies, school counsellors, placement officers and co-ordinators is shown in Table I. A careful study of these data reveals several varied tendencies in current practice. For example, although a number of schools have successfully inaugurated separate credit courses in "occupations," "vocational information," "vocational civics," and the like, there is some difference of opinion relative to the necessity of resorting to this practice where broad and flexible programs of enriched studies and

EDGERTON AND HEER

TABLE I.—THE RELATION BETWEEN THE SIZE OF THE CITIES AND THEIR CORRESPONDING PROVISIONS FOR OCCUPATIONAL STUDIES, SCHOOL COUNSELLORS, PLACEMENT OFFICERS, AND CO-ORDINATORS

POPULA- TION OF CITIES	CITIES HAVING GUIDANCE ACTIVITIES		NUMBER OF CLASSES TO STUDY OCCUPATIONS		NUMBER OF SCHOOL COUNSELLORS		NUMBER OF PLACEMENT OFFICERS AND CO-ORDI- NATORS	
	Num- ber	Per- cent	English, Civics, Practical Arts, etc.	Sepa- rate Credit Courses	Part Time	Full Time	Part Time	Full Time
10,000 to 15,000....	11	8	10	2	6	2	9	3
15,000 to 100,000....	83	58	93	82	94	35	105	48
100,000 and over.....	49	34	116	99	111	87	53	61
TOTALS....	143	100	219	183	211	124	167	112

vital experiences are offered, and suitable provisions are made for school counselling. Nevertheless, it will be noted that large numbers of these schools are continuing to offer such separate courses, either because of their faith in this method, because of the necessity of meeting a period of reorganization and transition, or because of the lack of feasibility in relieving one or more school representatives sufficiently to become responsible for group meetings, individual interviews, etc. At any rate, nearly all are agreed that the success of these occupational studies, which are presented either through separate credit courses or through English, civics, practical arts, and the like, will be determined largely by the training and experience of the counsellors or teachers in charge and the provision for collecting, evaluating, and imparting the information involved. Furthermore, it is believed that under no condition should these considerations about industrial, commercial, household, agricultural, and professional occupations be made incidental instead of an important and functioning part of the whole school program.

Notwithstanding this wide difference in the methods of procedure, these schools are seriously attempting to prepare boys and

girls to meet the demands for efficient service as members of families, and of vocational and civic groups. Perhaps the most noticeable indication of this slow, but certain reorganization is evidenced by the splendid relationships which now frequently exist in the same school system between separate courses of study for general educational purposes and for strictly vocational training values.¹ It is interesting to note that a large proportion of all teachers who reported regarding the practicability of imparting occupational information through their respective general and vocational courses stated their belief, with varying degrees of emphasis, (1) that pupils should have a general understanding of the nature of the work, methods of employment, and requirements for success in the important divisions of occupations (including the professions), (2) that they should have a fair appreciation of the problems and conditions confronting persons engaged in these positions, and (3) that they should become somewhat acquainted with the relative possibilities that are open in such pursuits.

The relative emphasis which these 143 cities of varying population are now placing upon school counselling, training programs, placement activities, and follow-up work likewise signifies marked differences in their respective provisions for educational and vocational advisement. Figure I shows the distribution of these public school systems in percents according to the general guidance activities provided. In other words, of these 143 departments or bureaus, 96 arrange to assist all pupils in studying and choosing vocational possibilities; 74 attempt to provide all pupils with educational guidance and vocational preparation; 134 provide systematic employment or placement systems; 11 provide systematic employment supervision or follow-up work.

It will be noted that, with few exceptions, these school systems have done little, but have planned much, in supervising the juniors' contacts with their employers. The most comprehensive programs have assumed some responsibility for advisement, placement, and adjustment of boys and girls (1) who are qualified for part-time work, (2) who desire positions upon leaving school, or (3) who

¹See Chapter I in Section II, which deals with vocational education for the industries.

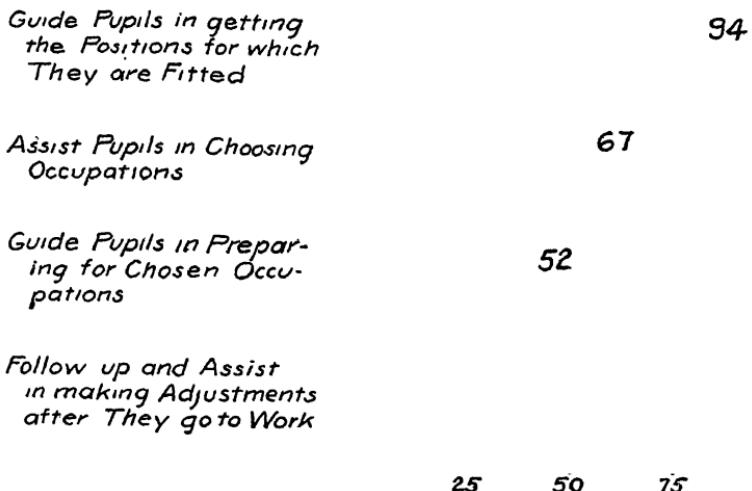


FIG. 1.—GRAPH SHOWING THE DISTRIBUTION IN PERCENT OF THE 143 PUBLIC SCHOOL SYSTEMS ACCORDING TO THE GENERAL GUIDANCE ACTIVITIES PROVIDED

wish to transfer to other employment. In addition to the permit-work or non-attendance cases, a few departments aid pupils in securing part-time employment while attending school, and likewise follow up and help in placing any person (from approximately 15 to 20 years of age) who may have dropped out of school. This system offers constant service in employment and training adjustment for junior wage-earners and serves as a clearing-house for information needed by the employers.

Figure 2 gives a graphical comparison for three years (1921, 1922, 1923) of the relative growth in school counselling and in placement work for all of these 143 school systems where both activities have been inaugurated and now exist in some form. Perhaps it should be stated that much of this recent growth in placement emphasis can be attributed to the co-operative efforts of the Junior Employment Service of the United States Department of Labor and the several state employment divisions. It is the purpose of the school systems, with the assistance of these agencies, to place the boys and girls in that type of work for which they are

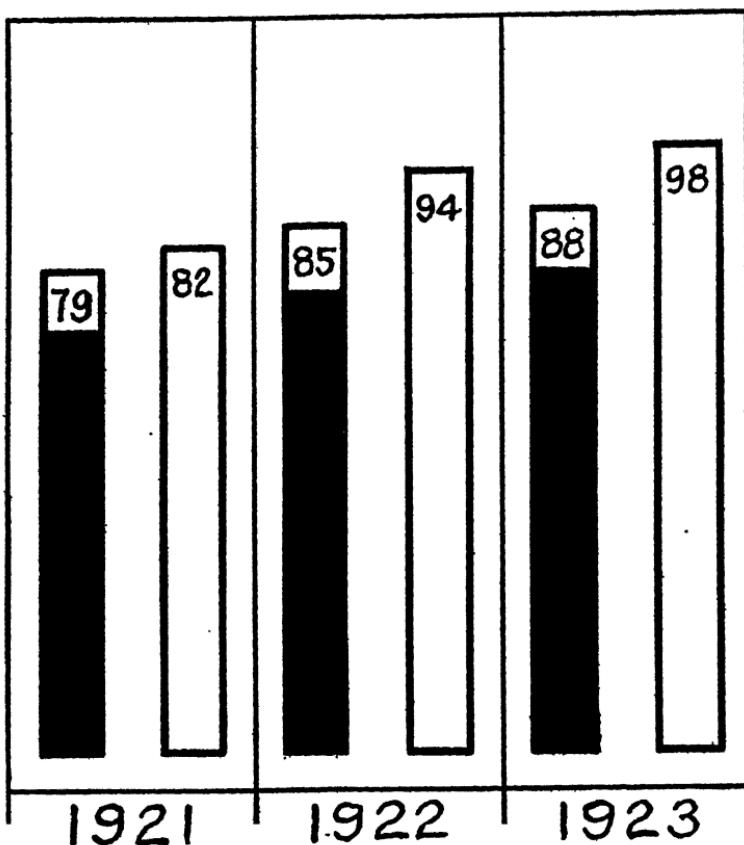


FIG. 2.—GRAPH SHOWING THREE YEARS OF THE COMPARATIVE GROWTH OF SCHOOL COUNSELLING (BLACK) AND PLACEMENT WORK IN ALL OF THESE 143 SCHOOL SYSTEMS WHERE BOTH ACTIVITIES EXIST

best fitted. Then, too, a few cases have been noted where systematic visits are made to places of employment to help to re-adjust junior workers who have outgrown their present positions.

However, as shown by the graphic representation in Figure 2, there are a number of cities which tend to conceive the vocational and educational guidance possibilities as limited almost entirely to the technique of placement. Their main concern seems to be that of finding desirable employment for those children who are taking

out their working papers, rather than that larger problem of encouraging boys and girls to remain in school for training until they are sufficiently well prepared to choose and enter industrial, commercial, agricultural, household, or professional occupations adapted to their likes and abilities.

This near-sighted interpretation of the function of guidance in the public schools brings to mind an interesting report which recently came to our attention. A certain Western community, a number of years ago, became alarmed at the enormous increase in accidents on one of its highways where there was a dangerous turn above a steep precipice. The community, accordingly, caused a large hospital to be built at the foot of the mountain, with equipment to meet such exigencies as might arise. After several years of unnecessary inconvenience, suffering, and tragedy by travelers, it occurred to the authorities that remedial measures would eliminate almost all accidents. This was actually accomplished by building a strong fence at the top of the mountain beyond the turn of the highway in question.

In using this analogy, we have hoped to give a better appreciation of some of these problems which confront our committee and all others who have co-operated in collecting data and preparing reports for this *Yearbook*. It occurs to us that the strongest fence which might be erected to help prevent further misconception and misinterpretation in this rapidly developing vocational guidance movement, is to be realized from suggestively helpful statements of successful local programs. In the remainder of this chapter and the chapters which are to follow, we shall refer to several significant tendencies, but our reports will relate mainly to those progressive public school systems which are conscientiously endeavoring to develop adequate programs for educational and vocational guidance.

GUIDANCE EMPHASIS IN ELEMENTARY SCHOOLS

Although it is generally agreed that the exploratory activities (so-called 'finding' and 'try-out' experiences) and systematic guidance may well be postponed for the grades above the sixth, both psychology and observation indicate that children from six to twelve years of age are much concerned with the activities and sit-

uations in which adults are engaged. Many progressive teachers believe that there unquestionably is need in elementary education for work and study which involve an elementary interpretation of the many vital, but complicated occupational situations, conditions, and relationships that confront all citizens and consumers both early and late in life.

As would be expected, varying degrees of emphasis are being given to construction work and subject matter by the six elementary grades in the school systems investigated. "Nevertheless, with few exceptions, the 352 teachers interviewed report that they recognize the need for having the occupational considerations give some attention to each one of the following closely related experiences:

- (1) Motor expression as a means of stimulating interest and mental activity, and of developing the muscles and senses to a reasonable degree (dexterity and discrimination);
- (2) Information regarding common materials, processes, products, and developments to make pupils conscious of important divisions and relationships in their complex social environment;
- (3) Situations involving some understanding of the human factors (problems, conditions, and meanings) in the workaday world to encourage thoughtful appreciation of the possibilities for social service and individual expression."²

As many as 94.7 percent of these teachers are committed to giving some time to a general understanding of the materials, processes, and problems involved in changing raw materials into more valuable commercial products. Several of them also state that the studies should be considered as a means for enriching or vitalizing several of the other school subjects. Questions concerning sources and preparation of materials, manufacturing processes, and the character and lives of the workers arise in a natural way, and where these are given proper attention, it is reported that they contribute materially to an intelligent understanding of present-day occupations. Excursions, moving pictures, exhibits, selected read-

²A. H. Edgerton. *Industrial Arts in Our Elementary Schools*, p. 23. Manual Arts Press, 1922.

ings, discussions, and clubs likewise become important factors in the development of this study.

Nearly all of these teachers seriously believe that occupational experiences should not merely limit pupils to either narrow or imposed tasks in handwork, but should offer sufficient opportunity for understanding and appreciating the worth of each activity and interest, as well as for allowing some freedom in meeting the difficulties which arise in developing their own problems. While it is important that the pupils learn to follow directions and conscientiously and accurately to perform those tasks which are assigned to them, it is agreed that these requirements should not be over-emphasized to the sacrifice of that development in initiative which makes for the proper expression of personality in either group or individual situations. It is interesting to note that those teachers who are most insistent about this particular emphasis are the ones that have done most in presenting general occupational suggestion in a more or less systematic manner in their first six grades.

GUIDANCE ACTIVITIES IN JUNIOR HIGH SCHOOLS

The rapid growth of intermediate schools and junior high schools represents a serious attempt to help *all* pupils, regardless of their social status or possible life work, to meet the new and changing demands for many-sided service as members of families and of vocational and civic groups. Such growing tendencies to respect group needs and individual differences in public education have resulted in various provisions for partial differentiation (from one-third to one-half of the school day) during the junior-high-school period.

This reorganization of upper-grade curricula aims to use all of the available resources in preparing children to make proper choices and adjustments, and to help them to determine their own future careers. Consequently, these schools are concerned with the number of boys and girls whom they succeed in encouraging to remain in school for training until they are sufficiently well prepared to choose and enter professional, commercial, industrial, household, and agricultural occupations adapted to their likes and abilities. These objectives assume that both social and psychological

needs of early adolescence should be respected by giving appreciative insight into a sufficient number and variety of representative experiences to explore, discover, and develop tendencies, aptitudes, and abilities for understanding and doing, as well as managing and supervising occupational activities.

In keeping with this spirit, the most comprehensive of these junior secondary schools are concerned with problems of aiding their pupils in the following particulars through closely related instructional provisions:

- (1) By broadening their understanding of economic production, to increase respect for different workers and their respective occupational pursuits;
- (2) By preparing them for greater insight and wisdom in judging and using various resources, products, and services;
- (3) By helping them to develop general appreciation and occupational intelligence in keeping with worthy citizenship;
- (4) By offering them opportunity for testing interests and capacities as a basis for selection of desirable educational programs, for choices of suitable vocations, and for adjustments in actual employment.

Stark's³ recent study dealing with the characteristics of pupils in grammar grades and high schools, with respect to readiness to undertake studies about occupations, leads him to conclude that there is a pretty general agreement that the age of serious thinking is a variable quantity under ordinary conditions, since the age of adolescence is a period of so much shifting and changing of ideas and attitudes. At the same time, by charting all of the reactions obtained and plotting the points for an age curve there appear to be three important periods for our consideration. The first centers about the age of 12, the second about the age of 15, whereas the third might be described as a period ranging from about 18 to 21 years or further described as the period of entering into, and trying out, actual occupational experiences. Then, too, we have Thorn-

³Wm. T. Bawden. *Studies About Occupations in the Public Schools*. United States Bureau of Education, March, 1923. Industrial Education Circular, No. 13.

dike's⁴ study on the resemblance between relative interests and relative capacities, and between interest in the last three years of the elementary schools and capacities in the college period, in which he concludes that the facts unanimously witness to the importance of early interests.

Beginning in the seventh grade, the pupils in many cities of over 10,000 population are having short exploration periods in a number of unit courses involving interesting and profitable experiences, while they are continuing their studies in several subjects often with other differentiated groups of students. This plan, including reliable information and systematic counsel, frequently gives pupils, counsellors, and teachers some sane basis for the future adjustment of courses and the selection of life work. When the study of occupations is based upon factual material, rather than upon opinion, which naturally is variable, pupils are better enabled to enter their life careers with some vision of the vocational opportunities and employment requirements that constitute an intelligent choice. Experience in several schools has demonstrated beyond doubt that this procedure has been an incentive for causing a number of pupils to continue through the ninth grade and to enter the senior high school. In such cases it is reported that they usually choose courses more intelligently and make progress from the outset.

This guidance emphasis is favored by 301 of the 379 intermediate and junior high schools which have recently reported from 21 states on the different activities now being offered to their seventh-, eighth-, and ninth-grade pupils. The majority of these schools report that they are making no special attempt to emphasize proficiency in specific occupations as low as the seventh and eighth grades. This is mainly because of their increasing conviction that occupations offer little to boys and girls under sixteen years of age. During this period the chief emphasis is rather *to help all pupils to develop a reasonable amount of perspective and reasoning power in connection with life situations, as a basis for purposeful election of courses, proper choices of occupations, and later adjustments in employment.*

⁴E. L. Thorndike. "The permanence of interests and their relation to abilities." *Pop. Sci. Mo.*, November, 1912.

Over 67 percent of the 379 schools which were investigated include notable changes in their upper-grade curricula and also encourage the deferring of definite occupational selection as long as possible. The majority of the school organizations which favor semi-specialization in particular differentiated courses, either beginning with the second semester or at the end of the seventh grade, are located in cities of over 200,000 population. This indicates that the chief reason why nearly one-third of these schools now foster courses which are optional in name only, and which actually impose early choice upon their adolescent pupils, may be the administrative difficulty involved in offering a greater number and variety of activities to large numbers of pupils. In the reports from 303 of these schools, each of which gave its main reason for reorganization, the four leading claims, when collated, were found to be given the order of importance listed in Table II. It will be noted that "aiding in the deliberate and wise selection of life occupations without encouraging early choices" was voted as the second important emphasis of these four major claims by those representing the schools concerned.

TABLE II.—SHOWING THE MAIN REASON GIVEN BY EACH OF 303 SCHOOLS FOR OFFERING EXPLORATORY COURSES^a

CHIEF EMPHASIS	SCHOOLS	
	Number	Percent
1. Contributing to all-round development, general experience, and intelligence.....	118	39
2. Aiding in the deliberate and wise selection of life occupations without encouraging early choices.....	101	33
3. Enriching the school experience of the pupil through concrete situations.....	78	26
4. Preparing in the school and through co-operation outside for direct entrance into vocations.....	6	2

The great majority of these 303 schools which reported on the educational and vocational guidance phases of their instruction expressed a striking need for presenting profitable experiences which are well adapted to the problems of revealing capacities and de-

^a(For more detailed statements see Edgerton's *Industrial Arts and Preventive Education in Junior High Schools*, p. 16. Bruce Publishing Company, 1922.)

veloping interests and powers, in keeping with the general aims and purposes of their respective junior-high-school organizations. Several schools even insisted that this objective could not be accomplished fully unless provision is made for freedom in choice and for individual experimentation.

In addition to the studies of general conditions and problems in choosing life work and preparing adequately for it, other schools place much emphasis upon group excursions to local establishments, and student reports on investigations of type occupations. The best of these reports include such important considerations as nature of work, main advantages and disadvantages, qualifications and training needed, possibilities and requirements, remuneration, hours of work, seasonal demands, entrance age, time required to learn duties, permanence of occupations, and deficiencies of workers. Where reliable surveys are made and careful studies are provided, these student reports are invaluable in helping pupils to form sound judgments relative to the character and future of positions open to them. As the occasion requires it, pupils are brought into contact with reliable reading matter, unbiased specialists, or whatever other sources of information may be most needed at the time. In some cities, beginning with the seventh grade, simple, but effective, cumulative records are used advantageously, to record such inferences as teachers and others have based upon school performances and activities carried on outside of school.

It is believed by a number of these teachers and counsellors that the significance of the likes and dislikes which are fostered by pupils of this age, as well as their corresponding relation to abilities and inabilities, has an important bearing on the character of guidance and counsel to be given both during the period of school attendance and during the period of early employment training and adjustment. Although some promising psychological devices and tests⁶ have been developed for measuring general intelligence, mechanical aptitude, general knowledge, trade knowledge, and skill, it is believed by a considerable number that there is no better method in use at present for discovering capacity related to the types of ex-

⁶See Chapter VIII for detailed statements concerning objective measurements in educational and vocational guidance.

perience represented in the school than to observe the degree of success and failure resulting from each division of the school performance.

Knowledge of the employment possibilities and requirements for the various divisions of professional, commercial, industrial, household, and agricultural occupations is considered essential; however, the schools are not concerned merely with the suitability of children for given positions. In the last analysis, they insist that they are obligated to ascertain the suitability of such available positions for the boys and girls in question. Not only do some of the most progressive schools provide a broad program of studies with opportunity for each pupil to explore, discover, and develop any special capacity for understanding, doing, and managing projects, but they also furnish related information for maturing the pupil's judgment of present-day problems and relationships. In this study of 379 schools for example, it was found that only 86 schools, or approximately 23 percent of those investigated, have provided for a reasonable amount of technical, vocational, and occupational information in connection with their industrial arts or manual arts activities (see Table III).

TABLE III.—THE RELATIVE EMPHASIS GIVEN TO THREE TYPES OF RELATED INFORMATION IN THE SCHOOLS INVESTIGATED

Kind	Purpose	Number
Technical Information	For enlarging the understanding of tools, materials, operations, and principles directly related to the shop work.	147
Vocational Information	For illuminating the school experiences by giving insight into commercial processes and methods employed in economic production.	112
Occupational Information	For helping to appreciate and judge labor conditions, importance of work, health problems, future opportunities, remuneration, qualifications and training.	86

GUIDANCE ACTIVITIES IN HIGH SCHOOLS

The detailed provisions for vocational and educational guidance in the 379 junior high schools and the 256 high schools which were investigated, are shown in Table IV. With few exceptions, these guidance activities are provided with some supervision and assistance from central bureaus or departments of the board of education. In a few cases, however, the assistance is provided in co-operation with other agencies.

When collated, these data for the 635 secondary schools were found to correspond closely in detail with the results of McDougall's study⁷ of vocational guidance in 130 high schools, representing 32

TABLE IV.—DETAILED PROVISIONS FOR VOCATIONAL AND EDUCATIONAL GUIDANCE IN 635 SECONDARY SCHOOLS (379 JUNIOR HIGH SCHOOLS AND 256 HIGH SCHOOLS)* THROUGH ASSISTANCE FROM BUREAUS, DEPARTMENTS, AND OTHER AGENCIES†

GUIDANCE ACTIVITIES PROVIDED	SCHOOLS USING SERVICES	
	Number	Percent
Surveying local occupational opportunities and requirements to some extent	244	38.5
Studying results of these data and other reports of investigations	171	27
Testing pupils' abilities and interests in various ways	212	33
Assisting individual pupils in choosing vocational possibilities	351	61
Offering vocational training programs	489	77
Assisting all pupils in selecting educational possibilities	537	84.5
Offering vocational placement for part-time and full-time employment	440	68
Providing some form of employment supervision and follow-up	195	31

*The schools which defer occupational considerations until late in the high school period are dealing with selected groups of pupils.

†It is interesting to note that marked differences do not exist at present in the content and method of the guidance activities in the majority of these junior and senior schools.

⁷H. R. McDougall. "Vocational guidance in high schools." *Industrial Arts Mag.*, April, 1922, 133-135.

states. The detailed summary of the reports from this study is as follows:

Fifty-four schools have available reports of surveys of local occupational opportunities; 46 schools report prevocational courses or vocational guidance in Grades VII and VIII; 81 schools make an organized effort to discover vocational aptitudes through work in English; 54 schools require or urge teachers to act in the capacity of vocational counsellors; 34 schools offer courses in vocational civics or "occupations"; 31 schools use a text in the study of the occupations; 68 schools require written reports on local industries or other assigned vocational topics; 75 schools organize class excursions to local industries and commercial establishments; 51 schools employ a director or special teacher responsible for vocational guidance; in 62 schools this work is handled by the principal, and in 26 schools by the deans of boys and girls; 97 schools offer some special vocational courses; 86 schools have employment or placement bureaus, and 43 function through central bureaus, usually under the direction of the board of education; 43 schools report employment supervision and follow-up work; 36 schools make some use of mental tests as an aid in determining vocational aptitudes.

Those who have participated in the slow, but certain reorganization and development of these activities for general educational purposes, aside from specific wage-earning preparation,⁸ are well aware that the new developments in the seventh, eighth, and ninth grades are forcing the discontinuance of similar objectives and activities in the high schools throughout the United States. With the increased vocational emphasis in the senior high school, which is assumed by the 'self-finding' emphasis in the intermediate or junior-high-school organization, it is often reported that certain related occupational knowledge is either necessary or desirable as supplementary training for those secondary school pupils (1) who seek understanding of and insight into local occupations as a basis for future promotion in commercial, industrial, and allied callings; (2) who desire occupational perspective as a part of their training for leadership in business and industrial pursuits; (3) who wish an overview of the occupations to equip themselves better for professional or semi-professional careers.

In answer to this challenge, several of the senior high schools studied have arranged training programs of part-time co-operation

⁸See Chapter I in Section II for reports on industrial education.

for those who expect to enter occupations of a secondary rather than of a professional grade. This instruction, which is designed primarily for those who are preparing for direct entrance into occupational pursuits, including semi-professional callings, or who are returning for specific extension work, aims to give a high degree of skill or at least to add to the trainee's technical efficiency. Again, it is usually recognized that the most urgent need for the majority of pupils between twelve and sixteen years of age is not so much for a high degree of manipulative skill as it is for reliable information with which to judge the present conditions, opportunities, and limitations in available occupations. Where the best results have been obtained, these courses are paralleled by systematic studies of real productive pursuits rather than by mere textbook acquaintances (see Table V).

TABLE V.—OUTLINE FOR THE STUDY AND DISCUSSION OF OCCUPATIONS
(Devised and Used by Vocational Counsellors* in
Cass High School, Detroit, Michigan)

1. Importance

How does this occupation contribute to the welfare of society?

2. Historical background

How has this occupation grown and changed?

3. Tasks

- (1) What are the main branches, departments, or types of work in this occupation?
- (2) What things are actually done by persons in this occupation?

4. Economic conditions

- (1) Opportunity for learning; for advancement; for initiative
- (2) Remuneration
- (3) Steadiness of work: Does it fluctuate by season, week, or day? Plan for vacation?
- (4) Hours
- (5) Health and safety
- (6) Size of this industry or business:
 - (a) Number engaged in it in this community
 - (b) Comparison of importance here and in other communities, as measured by number engaged in it, value of product, and capital invested
 - (c) Estimate of its future development and demand for workers, local and general
- (7) Organizations of employers and employees

*Gladys Little and Sherman Wilson are directly responsible for this plan.

5. Preparation

- (1) What education or training is necessary or desirable?
- (2) What experience is required? What kinds of work lead up to this occupation?
- (3) To what other occupations might this one lead?

6. Qualifications

What special qualities are required for success?

- (a) Physical
- (b) Mental
- (c) Moral or character qualities

7. Advantages and Disadvantages

Based on total previous discussion, especially economic conditions

8. Relation to the Community

- (1) What other occupations are similar or related to this one?
- (2) Does this occupation help the worker to have a good life as a citizen and as an individual?

However, a comparatively large number of these schools insist that the pupils can be given enough freedom in choice and specialization in representative experiences to help many in the tentative selection of their life work and to help some in the beginning of their preparation for it. It would seem that the vocational studies and more specialized courses which are designed in part to test and develop interests and capacities for understanding and doing occupational work do tend to contribute more toward the vocational efficiency of pupils during the ninth and tenth grades. If desirable, this would seem to be the psychological and physiological time to place somewhat greater emphasis upon technique and the related technical knowledge. As a result of the various exploratory experiences during the seventh and eighth grades, some pupils are found taking more intensive work in activities already started, while others prefer to investigate new fields of work or experiment with selected problems. This practice likewise is observed in several of the schools which take the attitude that while some pupils will not be adapted to industrial, commercial, and allied occupations, either in interest or ability, all should have more or less acquaintance with, and understanding of, productive pursuits as to their importance, conditions, and relationships, merely as a part of their general education.

GUIDANCE EMPHASIS IN PART-TIME OR CONTINUATION SCHOOLS⁹

As the efficiency of part-time education depends to a large extent upon the development of an effective system of co-ordination and guidance for paralleling the individual instruction, the counsellor provisions usually are considered an important part of the programs for both boys and girls in continuation schools. Following the general exploratory courses and occupational considerations in the intermediate or junior high schools from which these junior workers have come, the studies, interviews, conferences, and talks in continuation schools are usually reported to become more intensive and to give increasing attention to the presentation of facts in keeping with the varied interests and abilities of the learners. To meet this urgent need for extending school service, a growing number of schools are including worth-while investigations and analyses of local occupational pursuits, in order to secure up-to-date information concerning current conditions and demands. There is a general belief that for the vast majority of pupils of compulsory attendance age, one of the most urgent needs to-day is for sufficient first-hand information with which to judge relative requirements and opportunities in suitable callings or vocations.

In a large number of the 178 part-time schools investigated the teachers, sponsors, and counsellors provide individual and group conferences for stimulating all pupils enrolled. Again, the success of this part of the vocational guidance program seems to be determined largely by the training and experience of those in charge, as well as by the provision made for collecting and imparting the information involved. In addition to the general considerations in choosing an occupation and preparing adequately for it, first-hand surveys of local establishments and reports on investigations of typical divisions in occupations are helping many pupils to form sound judgments concerning the character and the future of positions which are open to them.

The main types of guidance provided for these junior workers by teachers, counsellors, and co-ordinators in the 178 part-time

⁹See the chapter in Section II dealing with reports from several part-time schools.

TABLE VI. MAIN TYPES OF GUIDANCE ACTIVITIES PROVIDED FOR PUPILS BY TEACHERS, COUNSELLORS, AND CO-ORDINATORS IN 178 PART-TIME SCHOOLS

KINDS OF GUIDANCE OFFERED	PART-TIME SCHOOLS	
	Number	Percent
Initial interviews, and conferences for classifying pupils and for encouraging serious consideration of occupational problems	149	83.5
Follow-up and adjustment of pupils	55	31.0
Group meetings for talks by specialists	82	46.0
Related vocational information imparted through courses and activities in social science, English, etc.	109	61.5
Co-operative checking of students' records	39	22.0
Co-operation with all agencies which reach parents and children, or investigate home and working conditions, etc.	137	77.0
Co-operation with placement officers and co-ordinators	123	69.0

schools investigated, are shown in Table VI. It will be noted that a wide difference in emphasis is being given by these junior continuation schools to the several kinds of guidance offered in a few of them. For example, occupational information or vocational guidance instruction is considered of first importance by certain schools; others give more stress to the continuation work which has a direct relation to the progress of the individual on his job; still others give major attention to the vocational instruction for specific training in commercial or industrial pursuits. In several cases the co-ordinators, with the aid of the teachers and counsellors, have successfully connected the school activities with those of the occupational pursuits. These co-ordinators, visiting the boys and girls where they are employed, check up their progress in school and in employment, recommend adjustments in school courses to meet the needs of industry, assist in laying out training courses in employment to parallel the school work, and, when a child is found to have outgrown a job, recommend desirable changes in employment.

In most large cities it is reported that literally thousands of boys and girls have had several unsupervised jobs during two or

more years of working experience, most of which have offered comparatively little in employment training and adjustment that will help them to choose suitable educational opportunities or life work. At its very best, considering that work has been selected in an occupation which seems to offer good opportunities, the determining factor of success usually depends upon whether or not the junior worker makes good and likes it well enough to continue. As a result, it is no wonder that so many junior wage-earners (considerably over 90 percent in some junior employing establishments) fail in one position after another, until they finally manage to succeed sufficiently well to remain in one. Such a method of trial and error cannot be otherwise than extremely wasteful to all concerned, as it postpones the child's decision until it is usually too late to choose educational opportunities wisely in the secondary school.

SUMMARY AND CONCLUSION

The school guidance and counseling activities that have been enumerated for different levels of learning may be grouped as follows:

- I. Collecting occupational information and making it available to pupils:
 - (1) Through central office surveys, source bulletins, opportunity literature, etc.;
 - (2) Through contact with employment problems of junior workers, etc.;
 - (3) Through excursions, reports, posters, and charts for showing industrial opportunities, moving pictures, etc.
- II. Interviewing and conferring with pupils, parents, and others concerned in order:
 - (1) To assist in the selection of courses of study and training programs;
 - (2) To assist pupils in the study and choice of vocations;
 - (3) To assist those planning to drop out of school through the services of the placement bureau;

- (4) To consider failures referred by scholarship committees or others to determine cause and possible remedy for same;
- (5) To assist pupils desiring change of school subjects or programs;
- (6) To provide groups with (a) talks on occupations in general, and (b) talks for those interested in specific vocations;
- (7) To counsel students desiring working permits for steady employment, for after school work, etc.;
- (8) To follow up and help adjust graduates and former students, etc.

III. Contributing to curriculum building and the adjustment of pupils to meet occupational needs and interests.

IV. Recording results of school performance and measurements:

- (1) By adapting records (psychological tests, self analysis, cumulative data) to educational and occupational needs;
- (2) By keeping records of case studies, etc.

V. Acquainting the public with educational problems:

- (1) Through contact with prospective students;
- (2) Through parent-teacher organizations;
- (3) Through newspapers, industrial organizations, commercial clubs, etc.

Even a tentative choice of an occupational pursuit assumes the successful completion of the required preparation. To be sure, it is possible for the vocations themselves, to provide individuals with varying degrees of opportunity for understanding and doing work in several occupational pursuits; but this often requires that they must either fail or become dissatisfied with one kind of work before they can be tried out in another. The fact that boys and girls do like and succeed in the work of their first, second, or third choices is by no means satisfactory assurance that they have chosen the respective occupations for which they are best suited, since the important bases for comparing the opportunities and

requirements, in terms of significant likes or dislikes and abilities or inabilities, too often are decidedly limited or entirely lacking. In cases of failure, it is quite possible that the loss of confidence, which children sometimes experience at these times, has a depressing effect upon their attitudes toward other positions.

At any rate, this plan either fails completely to give a background of experience for making satisfactory choices and adjustments or it succeeds in a fashion after a long-drawn-out process of elimination. Even though it were possible for inexperienced junior wage-earners to make their own selections of occupational pursuits, which is seldom true, they are certain to lack that background of information and experience which can help them in judging and choosing life careers somewhat intelligently. It will be noted that a number of the wide-awake schools report they are preventing just such emergencies in their junior high schools, high schools, and part-time schools, by providing systematic guidance and counsel through both exploratory experiences and occupational studies for some time before their pupils leave school. The detailed statements and reports in the following chapters should challenge all to test and develop appropriate methods of procedure.

CHAPTER II

A STATE PLAN OF EDUCATIONAL AND VOCATIONAL GUIDANCE

HAROLD L. HOLBROOK

Chairman, Committee on Guidance, Pennsylvania Department of Public Instruction, Harrisburg, Pennsylvania

I. INTRODUCTION

A. Is there a Need for a State Program of Guidance?

To make this question a little more specific we may ask: What service in the field of educational and vocational guidance can a state department of public instruction render that will not be as well or better accomplished if left entirely to local initiative or to other agencies already in operation?

Assuming that there is a need for guidance service to the boys and girls of our rural communities, villages, and boroughs, as well as to the children of our cities, and that teachers, as well as principals and counsellors, should have this guidance point of view, the following may be emphasized:

1. *Teacher training courses in guidance* for teachers in training and teachers in service can be promoted more effectively by a State Program, and, if desirable, these courses can be made a requirement for certification. This field is distinctly a responsibility of the state.
2. *The promotion of guidance activities* in local districts can be effectively stimulated through the medium of state and county educational gatherings, and through field work of a state department staff in co-operation with guidance leaders and educational administrators.

B. Beginnings of the Pennsylvania Guidance Program

The guidance program came about largely by way of a vocational guidance approach. Vocational guidance was included as an

activity of the Bureau of Vocational Education of the Pennsylvania Department of Public Instruction in 1915. Through lack of time and funds, however, work in this field was limited to visits to centers engaged in this work, and annual reports on these centers to the Superintendent of Public Instruction. In 1920 the writer, at that time in the Vocational Guidance Department of the Pittsburgh Public Schools, was appointed one of three state supervisors of industrial education and shortly afterward was assigned to vocational guidance as a part-time activity.

A study of the guidance problem in Philadelphia, Pittsburgh, Erie, Harrisburg, Johnstown, and smaller communities followed, and showed in particular the need for some plan whereby the teacher might be linked up more closely with school counselling.

A greater appreciation of the extent of this field came in the early months of 1921 through the work of Dr. Francis N. Maxfield, Psychologist and Director of the Department Bureau of Special Education. Dr. Maxfield emphasized the importance of individual differences during pre-school years and a definite recognition and treatment of these differences upon school entrance and in the years following.

In May, 1921, the writer prepared an outline for a comprehensive program of guidance, which was presented at a conference of Department bureau directors and specialists, with the request that a committee¹ be appointed to develop a program and prepare necessary bulletin material.

C. The State Advisory Committee on Guidance

In addition to the co-operation of guidance specialists of the state, it is desirable to have similar service from men and women representing general school administration and teachers in typical county, city, borough, and rural community organizations. A state

¹On this committee the Superintendent of Public Instruction has appointed the following: Dr. J. Lynn Barnard, Director of Social Studies; Miss Muriel Brown, Assistant Director, Bureau of Special Education; Owen D. Evans, Assistant Director, Bureau of Vocational Education, in charge of Continuation Schools; James M. Glass, Director of Junior High Schools; Dr. Francis N. Maxfield, Director, Bureau of Special Education; Dr. A. L. Rowland, Director, Teacher Bureau; H. L. Holbrook, Supervisor of Industrial Education, Chairman.

committee² combining these two elements also helps to promote the development of guidance institute programs, other aspects of teacher training in guidance, and the development of the program in local school districts.

D. The Pennsylvania Program—In an Experimental Stage

One of the outstanding features—the starting of local guidance programs under local leadership and without provision of time out of school hours—has been incompletely demonstrated. Each of five ‘try-out’ communities has needed more leadership from the Department of Public Instruction than would be available, if more communities were to be served.

On the other hand, the experience gained through starting guidance programs in these communities, already under maximal teaching load pressure and lack of adequate clerical assistance, will enable us to help develop the work elsewhere with an expenditure of much less time.

²The following have been appointed by the State Superintendent of Public Instruction, as the State Advisory Committee on Guidance:

General Appointments

Frank M. Leavitt, Associate Superintendent of Schools, Pittsburgh.

Anna B. Pratt, Director, White-Williams Foundation, Philadelphia.

Dr. Edward Ryneerson, Director of Vocational Guidance, Pittsburgh.

Dr. George Wheeler, Associate Superintendent of Schools, Philadelphia.

County Schools

G. A. Grim, Superintendent, Northampton County Schools.

C. W. Lillibridge, Superintendent, McKean County Schools.

School District Superintendencies

H. R. Vanderslice, Superintendent of Schools, Coatesville.

University Teacher Training

Dr. Arthur J. Jones, University of Pennsylvania.

Normal Schools

Dr. Helen B. Trimble, East Stroudsburg Normal School.

Collegiate Guidance and High-School Articulation

Thyrsa W. Amos, Dean of Women, University of Pittsburgh, representing the Pennsylvania Association of Deans of Women.

City High Schools

Dr. C. B. Fager, Jr., Harrisburg.

Borough High Schools

H. W. Slothrop, Mt. Union.

Junior High Schools

D. D. McMaster, Johnstown.

High-School Counseling

C. F. Brockway, Erie, Pennsylvania.

Continuation Schools

Caroline M. Reedy, Reading, Pennsylvania.

Elementary Schools

Kate Barnes, Assistant County Superintendent, Mercer County.

Surveys of the local guidance field in a given community and the development of guidance projects by teacher committees probably will come after a series of teacher conferences on guidance, and after organization of simplified guidance bureaus. The indexed cumulative envelope, which has been used, has not been tried sufficiently to show what modifications may be needed, nor has its range of effectiveness in grades and high schools been determined.

E. Acknowledgment

The general program of educational and vocational guidance has been made possible by the unstinting co-operation of members of the Department Committee on Guidance, other members of the staff of the Pennsylvania Department of Public Instruction, the State Advisory Committee on Guidance, school districts with guidance activities already organized, and the school districts co-operating in the trial of the program. No less is it due to provision made for it by Mr. L. H. Dennis and Dr. F. Theodore Struck, Director and Assistant Director of the Vocational Bureau of the State Department of Public Instruction, to which this activity has been assigned.

II. FUNDAMENTAL CONCEPTS

After a preliminary study of the field, the following controlling principles became evident:

1. *Guidance should have all the objectives of education in view; including citizenship, worthy home membership, health, ethical and moral character, worthy use of leisure, vocations. To these, listed as kinds of guidance, should be added curriculum guidance.*
2. *The participation and co-operation of teachers should be secured. The present tendency to emphasize subject instruction and organization of school work on a departmental basis has made teacher and pupil relationships too impersonal. Therefore, in order to bring about a greater sensitiveness to pupil needs and interests, a guidance program should provide for the participation of teachers.*
All departments of education are concerned, including compulsory attendance, health, and other special activities.

Therefore, department heads, supervisors, principals, and other administrators should participate in the making of guidance plans, as well as in carrying them out.

Various agencies of the community have a service to render. These often can assist in the starting of a program, as well as in its development, and should be utilized providing there is no undue obligation involved to serve special interests.

3. *The program should be within reach of the average community.* The starting of a guidance program must not depend upon the services of skilled counsellors, but in most cases will have to come about through local realization of the importance of the work, and develop ultimately through adequate financial support. Guidance in many of the smaller communities, for a long time to come, of necessity may be restricted to the efforts of principals and teachers having heavy classroom assignments.

III. A TENTATIVE GUIDANCE PROGRAM

A. Main Factors in the Pennsylvania Guidance Program

Briefly, these are as follows:

1. *The formulation of main principles and objectives in the field of guidance.*
2. *The trial of these principles in their adaptations to various types of communities.*
3. *The development of guidance material for the use of teachers and administrators based on these trials.*
4. *A teacher training program, to include professional reading groups in school units, institute programs emphasizing guidance, extension and residence courses in normal schools and collegiate institutions, and graduate courses in collegiate institutions for training guidance specialists.*

B. Formulating a Tentative Program, Based on Fundamental Concepts

1. *Guidance Should Have All the Objectives of Education*

- a. *Terminology.* In order to impart this wider conception of guidance, it was found necessary to clarify the terminology of guid-

ance. Upon analyzing the various ways in which the terms "educational guidance" and "vocational guidance" are used, it was found that in some cases the words "educational" and "vocational" are used to denote the *medium* through which guidance is given and in other cases to denote the *objective* toward which guidance is given. For example, some writers termed the vocational guidance given as part of a lesson in English, educational guidance. In this case the lesson in English is the medium and vocational guidance the objective.

b. *Guidance should be named from its objective.* To avoid the confusion known to exist among teachers and administrators it was felt that one term should be consistent with another. The objective seemed to lend itself best to this purpose and was adopted to give name to kinds of guidance.

In accordance with this plan, "educational guidance" means "guidance toward education." Dr. Arthur J. Jones, of the University of Pennsylvania, suggested the term "curriculum guidance" as being more definite. This was found to be understood by teachers much more readily than educational guidance (which in the minds of many connoted vocational guidance) and was adopted. The word guidance was adopted as an inclusive term.

2. *The Place of Guidance in Education*

To show the place of guidance in an educational program, the following phases were marked:

a. *Guidance as a phase of subject instruction.* All school subjects were recognized as having guidance value, and in the main comprising two elements, fundamental principles and processes, and guidance, with even the fundamental principles and processes having guidance value if having significance in present or future conduct.

b. *School activities.* School activities were recognized as having marked guidance value, if properly conducted.

c. *Case work.* This was recognized as including school counseling, placement, and home visiting, the more highly specialized aspects of guidance.

3. *Participation and Co-operation*

School guidance committees, school guidance projects, and professional reading and discussion programs, conducted as a faculty or teaching staff activity, seemed to offer possibilities. The organization of these school committees into a general school council gives opportunity for school committees to have a voice in the making of plans affecting the entire school district, as well as to enable them to carry out these plans more enthusiastically when the details applying in each school are to be put into operation.

The participation of department heads, (including compulsory attendance, health, vocational education, art, etc.), principals and associate superintendents might best be provided by a central committee, in which the council of school guidance committees would be represented.

It was believed that while associations representing some special fields of activity in a local community might be able to finance the appointment of school counsellors and placement officers, other considerations might in some cases make it desirable to adopt a slower development of guidance. It was recognized, however, that the interest and the support of the community is essential to the ultimate development of a significant program.

4. *A Guidance Program Within Reach of the Average School District*

a. *Types of school districts.* Consideration of school districts in terms of possible guidance organization was found necessary. With this point in view, school districts of the state were considered subject to the following divisions: (1) school districts able and willing to install school counsellors assigned full-time to this work; (2) school districts financially able to employ trained counsellors under adequate leadership or to assign teachers to this work, but needing public interest and support before the movement can be supported by school boards; (3) school districts so small or under such financial stress as to necessitate postponing indefinitely the assignment of teachers or trained workers for part or full-time counsellings.

b. *A flexible program.* A canvass of the situation showed that there are very few school districts in the state that can start a program that involves the immediate employment of counsellors on either part-time or full-time. In a number of cases local organizations indicated a willingness to finance such a start. The superintendents, however, felt that it would be better for them to develop a sentiment for such a program and later install counsellors entirely under their own direction.

It became evident that the program must be adapted to the second and third types of districts, with two stages of development, as follows: (1) guidance organized on a committee basis, without the provision of experienced counsellors or teachers assigned part or full-time to counselling and guidance leadership; (2) guidance organization having the co-operation and support offered by committee organization and teacher participation, and in addition having the services of specialists or of teachers who have had time and training sufficient to become expert.

It was recognized that while the first of these stages must of necessity suffice indefinitely for many school districts, it had the advantage of stimulating the interest of teachers and others in the schools, and arousing public interest and adequate financial support.

c. *Committee organization.* The committee organization, with or without trained counsellors, was considered *basic for both stages*, and comprises the following: (1) *a steering committee*, composed of school administrators and supervisors, or in a large system representatives from their number. The chairman of this committee may be the superintendent of schools, or another leader in the school district, or the director of guidance; (2) *school guidance committees* in secondary schools and representatives from each of the elementary schools. These altogether form a *general school council*, the chairman of which may be the director of guidance; (3) *project committees* for the development of guidance material and special programs pertaining to local school units and the community. These include teachers, and function for the duration of the projects.

C. Trying Out the Program

Harrisburg, Hazleton, Franklin City, and Mount Union were selected as being typical school districts, and because of their in-

terest in this problem. Franklin County centers have recently been added.

1. *Harrisburg*

Harrisburg is the capital city, with a population of 82,000. The public school system has two senior high schools, two junior high schools, twenty-five elementary schools, and one open-air school. There are 14,000 pupils and 426 teachers. Dr. Clyde H. Garwood is superintendent of schools, succeeding Dr. F. E. Downes on March 1st, 1923.

Preliminary steps were taken in developing the guidance program in Harrisburg in January, 1922. Dr. C. B. Fager, Jr., Principal of the Technical High School, was then elected chairman of the central committee, and Miss Maude I. Gamble, supervising principal of three elementary schools, secretary of the central committee. Mr. Francis G. Wilson, instructor in the Technical High School, who had been giving additional hours for placement work, was elected general chairman of the school committees, and Miss Julia Ryan, a teacher in the Edison Junior High School, secretary. On the death of Miss Ryan she was succeeded by Mrs. Nettie B. Fox, who for nine years has been girls' adviser in the Central High School for Girls.

The guidance program was begun with a survey of the guidance field, and for this purpose the general council of school committees was divided into the following sub-committees:

1. Curriculum guidance.
2. Personal analysis, tests, and measurements.
3. Avocational, moral, and social guidance.
4. Occupations and vocational information.
5. Community co-operation.
6. School bureau organization, records, and reports.

Upon completion of these reports a series of projects was assigned to each of the four secondary schools, with each member of a school guidance committee serving as a project chairman. The following are twenty-two of the twenty-four projects assigned, consisting of informational and other material for use in the schools:

1. Scholarships.
2. Co-operation with semi-religious, philanthropic and charitable organizations.

3. From the employer's point of view.
4. How to study.
5. Information for prospective college students.
6. Collegiate catalogs and displays.
7. Home visit record.
8. Co-operation with organizations representing occupational interests.
9. Vocational opportunities in the Harrisburg district.
10. Intelligence tests in the guidance program.
11. Courses of study in Harrisburg High Schools.
12. Class visits to higher schools.
13. Co-operation with federal, state, and city departments and bureaus.
14. Inspirational literature.
15. Occupational literature in Harrisburg schools and libraries.
16. Self-analysis forms.
17. Avocational literature.
18. Co-operation with civic and neighborhood organizations.
19. The placement problem in Harrisburg.
20. Cards and leaflets to parents.
21. School preparation for specific vocations.
22. Teacher estimate.

Nearly all of these projects have been completed and are being printed at the school print shops.

Dr. Garwood was greatly interested in guidance activities while associate superintendent of the Pittsburgh schools and has given strong support to the program here. This has resulted in the assignment of Mr. Francis G. Wilson, general chairman of the school committees, to guidance activities for half-time, beginning in September.

The superintendent plans to have provision made in February, 1924, for the full time of Mr. Wilson, and for the full-time assignment of the chairman of the school guidance committees in the two junior high schools, Edison and Camp Curtin. The fourth high school, Central High for Girls, already has such an assignment.

A central placement bureau is being organized as part of the program, and will be under the immediate supervision of Mr. Austin Miller, Director of Compulsory Attendance, and operated in connection with his office.

A very simple type of guidance organization is to be introduced in the elementary schools in September, 1924, that will include the use of the indexed cumulative envelope developed by the Department of Public Instruction. One representative of the teaching staff from each elementary school probably will be included in the general council of school committees.

Various business, collegiate and welfare organizations are co-operating with school committees, and a professional reading and conference program in guidance is planned for secondary school teachers during this year.

2. Hazleton

Hazleton has a population of 32,500, with its business chiefly centered around anthracite mining and textiles. In its public school system it has one senior high school, two junior high schools, twelve elementary schools, 7,250 pupils, and 208 teachers. Mr. A. D. Thomas is superintendent of schools.

Preliminary steps in guidance organization were taken in February, 1922, and an attempt was made to follow as exactly as possible the procedure outlined for the Harrisburg tryout. Mr. Ward D. Jordan, supervising principal of the senior high school, was elected chairman of the central committee, which in this tryout was composed of all administrators and supervisors. Mr. Frank D. Munroe, instructor in English in the senior high school, was elected general chairman of the school guidance committees. The latter included four members of the teaching staff of each of the high schools, and one from each of the elementary schools.

Sub-committees of the school council undertook a survey of the field as in Harrisburg. With the inability of the chairman of the State Department Committee to work with these committees in the development of details, because of the distance from Harrisburg, and with no one in the local schools trained in this work, it soon became evident that a survey was not the right approach.

Guidance projects were then organized with members of school guidance committees as chairmen. These have been completed and are being printed in the vocational department print shop. A very simple type of guidance bureau has been organized in each of the

secondary schools and in three elementary schools. These are in charge of guidance committees, and special assignment of teachers for part or full-time counselling has not yet been made. The principals of all the schools including the senior high school have teaching schedules, and it may be some time before teachers or others can be released for special work in guidance. A central placement bureau has not as yet been organized, but probably will develop in the administration building.

3. *Franklin*

Franklin, a city of 10,000, is the county seat of Venango County, and concerned chiefly with oil refining and allied industries, and manufacture in metals. In its public school system it has one four-year high school and six elementary schools. A junior-high-school program is in the promotional stage. Franklin has 3,000 pupils, and 75 teachers. Mr. C. E. Carter is superintendent of schools.

The guidance program in Franklin was begun subsequent to the work in Hazleton. Taking advantage of the experience gained in the other trials, the program was made as simple as possible. All the principals and supervisors, totaling fourteen, were included in the central committee, of which Miss Adda McBride, Principal of the Union School, was elected chairman and Miss Margaret McNeil, Supervisor of Penmanship, secretary. Dr. G. Morgan Davis, instructor in social studies, was elected chairman of the council of school committees, and Miss Dorothy Elliott, high-school librarian, secretary.

Six projects were chosen and have been completed. School bureaus are in process of organization and guidance conferences are planned for the year. The principals all have teaching schedules, and the assignment of part or full-time for school counselling is a matter of the future.³ The high-school bureau probably will develop as a central placement bureau. The indexed cumulative envelope and simplified forms developed by the Department of Public Instruction are being used.

³Dr. Davis has since been given part-time assignment to guidance activities.

4. Mount Union

Mount Union, in Huntington County, has a population of 4,750, with brick yards and trade with the surrounding rural community as its major business. Mr. C. C. Smith is supervising principal. There are two schools; a high school housing a junior and senior high school, and an elementary school. There are 1200 pupils and 29 teachers. The central guidance committee is composed of the supervising principal, principals of the senior and junior high and elementary schools, the attendance officer, and visiting nurse. The supervising principal is the chairman of this committee. The principal of the high school, H. W. Slothower, who has a teaching schedule, is chairman of the combined committees of the two schools.

Mount Union has completed the seven projects it selected and has organized a guidance bureau in the high-school building, using the indexed cumulative envelope and simplified forms.

5. Franklin County

Trials of guidance in Franklin County have been recently organized under the direction of Miss Hannah A. Kieffer, Director of Rural Education at Shippensburg State Normal School⁴ and Mr. J. L. Finafrock, County Superintendent of Schools. This center was chosen because of the leadership available, and its proximity to Harrisburg. With the wide range of interests represented by the various counties of Pennsylvania, no one county can be said to be typical. Franklin County is largely concerned with general farming and fruit growing. The schools in this trial consist of a township group of one-room schools and one two-room school under the leadership of a teacher in the latter, and a modern consolidated rural school. These schools include the Southampton Township Schools, consisting of ten one-room schools in the open country and a two-room school located in Orrstown, a village of 217 people. The teacher in the upper room of the Orrstown school, Mr. S. R. Zullinger, acts as supervisor of the township schools, in such time as he can find outside of school hours. He has a full teaching schedule. The program in this group will be tried out first in Edgewood, a community having 18 school children in a one-room building, and

⁴Dr. Ezra Lehman is the head of this institution.

Sunny Hill, a community having 22 pupils in another one-room building, and in the Orrstown school. The Fayetteville Consolidated Rural School, Mr. Reese Bert, Principal, is located in Greene Township. It is a new brick five-room building, constructed along modern lines, and includes an assembly room that is also used as a gymnasium and community auditorium. This school takes the place of a group of one-room buildings which the children attended until a year ago.

D. How the Controlling Principles Operated in Actual Trial

1. Guidance Should Have All the Objectives of Education

Our progress so far has shown that this concept is practicable as well as theoretically sound. Teachers and administrators have readily grasped the idea of guidance as the individual boy and girl emphasis in education, whether in subject instruction, school activities or school counselling. The need of such an emphasis has been apparent particularly to teachers having many pupils on a departmental plan of subject instruction. Recognizing the vocational guidance value of a course in occupations, teachers have also come to see that any course of study that deals with life situations and points the way to present and future conduct and action has guidance value, whether it involves health, citizenship, worthy use of leisure, character, vocation or other objectives of education.

2. Participation and Co-operation of Teachers Should be Secured

Representation of the teaching body by school guidance committees, and inclusion of all administrators in a central committee on guidance, or their representatives where this number is large as in Harrisburg, has so far been entirely successful. It has carried over to the body at large the idea of guidance as something that concerns all, and has made easier the inauguration of guidance programs in the various schools.

The use of guidance projects as a first device to bring into play the active participation of individual teachers has not been quite uniformly successful. In a few cases this work was looked upon by

teachers as just one duty too much. In other schools where the principals and the project chairmen showed the same enthusiasm for the guidance program as they accorded activities originating in their schools, the teachers entered into the project work with commendable enthusiasm.

3. The Program Should be Within Reach of the Average Community

Apparently some form of guidance program will be within reach of any school district, even though it be carried on by some such modified plan as that suggested previously as Stage I. The smaller the school district, the more must principals and teachers assume the role of counsellors, and the more must reliance be placed on guidance material prepared by others under more favorable conditions of organization. Trials now being organized in rural districts will show to what degree this modification must be carried.

Summarizing our experience so far with respect to teachers and administrators, the following points may be noted:

- (1) A school program providing guidance projects or some guidance effort on the part of every teacher is a good approach in arousing teacher interest, especially in a school with fine morale, and a principal who sees the guidance emphasis in its true light.
- (2) The immediate organization of a school bureau with a guidance conference program for faculty meetings, preceding the development of projects, is a better approach, given a school with heavy teaching load or uncertain conditions in morale. It may be a better approach under any conditions.
- (3) School spirit can be aroused in a district-wide guidance program by having the same or similar work assigned to several schools and handled more or less on a competitive basis or by having each school develop its program along individual lines, with only such things in common with other schools as are especially desirable, for example, bureau forms, occupational information, and community surveys.

- (4) School guidance committees in nearly every case showed enthusiasm and willingness to co-operate in the development of the program. Judging by experience so far, there seems to be in each

school at least a few of the teachers who have always had the guidance point of view. With the leadership of this group, extending as it does into various departments of school work, supplemented with professional reading and conference programs in guidance, there is every reason to believe that almost any school can start with a guidance committee, and gradually develop the guidance point of view throughout the teaching staff.

(5) In selecting the chairmen and general chairman of school guidance committees, it is important that little or no other school activities out of classroom should be assigned. In two schools where trials were undertaken the chairmen appointed had other projects under way and could not give the time and attention needed for the guidance program.

E. The Development of Guidance Material

1. *Material of February 16, 1922, on Suggestive Organization*

This material was developed after a series of conferences with guidance specialists of the state, and prepared for use in the organization of tryouts. This included the following:

a. *Essentials*

- (1) Guidance.
- (2) Organization.
- (3) Teacher participation.
- (4) Participation of school administrators and special departments.
- (5) Co-operation with home and community.
- (6) Adaptation to meet varying needs.

b. *Suggested Organization for a City School System*

- (1) A central guidance committee.
- (2) The school unit:

Counsellors and school guidance committee.

Subject instructors.

Teacher advisers.

The principal.

The school office.

The attendance officer, visiting nurse and medical inspector.

- (3) A general school council.
 - (4) A preliminary inquiry.
 - (5) A central placement bureau.
 - (6) Articulation with the general educational program.
 - (7) Lines of initiative.
 - (8) As part of a community guidance federation or council.
- c. *Adaptations to Meet the Needs of Smaller Communities.*
- (1) Districts with several school units.
 - (2) Rural and other communities with one and two school units.
- d. *Diagrams*
- (1) Plan of organization.
 - (2) Articulation with general education.

This material was also sent to guidance specialists outside of the state for their criticism in the development of the program.

2. *The Harrisburg Reports*

Each phase of the Harrisburg development was recorded in detail for the use of other centers. This material included organization and other reports of the Central Committee and School Council, and sub-committee reports of the latter on various phases of guidance. These reports were prepared under the supervision of the Department Committee on Guidance, and include the following:

- a. Report of central committee on guidance activities.
- b. Organization reports of the general school council.
- c. Sub-committee reports:
 - Curriculum guidance.
 - Personal analysis, tests and measurements.
 - Avocational, moral, and social guidance.
 - Vocational guidance.
 - Community co-operation.
 - School bureau organization, records and reports.
- d. Project election, approval, organization and forwarding sheets.

3. *The High-School Manual of the State Department
of Public Instruction*

Chapter VII in this bulletin published in 1922, presents guidance under the following topics:

- a. A changing educational problem.
- b. A definition of guidance.
- c. The pupils' need of guidance.
- d. Curriculum guidance.
- e. Vocational guidance.
- f. Other guidance activities.
- g. Guidance agencies in the school.
- h. Guidance through organization.
- i. The chairman of the guidance committee.
- j. Placement.
- k. Guidance in the small school.
- l. Outline for suggested organization of guidance in a high school.

4. *The General Guidance Bulletin*

The material for the completed bulletin includes the following:

- a. The Problem of Guidance.
- b. The Program of Guidance.
- c. Material on Guidance.
- d. Teacher Training in Guidance (Part IV).
- e. Appendix.

Part IVB, published in mimeographed form pending the printing of the general bulletin, is entitled "Professional Reading and Conference Program in Guidance for Teachers."

F. A Teacher Training Program

1. *Teacher Training Institutions*

Thirty-five normal and collegiate institutions have appointed representatives to co-operate with the Department in developing the teacher training phase of the program. Of these, fourteen are normal schools and twenty-one are colleges and universities. Nearly all of these offer extension courses in local centers throughout the state during the school year as well as summer courses and

are including the general course in guidance as rapidly as conditions permit.

2. *The General Course in Guidance*

This is an introductory course for all teachers, prepared by the Department Committee on Guidance, and comprises the following topics:

- a. The course in guidance outlined.
- b. The place of guidance in education.
- c. Activities in the field of guidance.
- d. Earlier aspects of vocational guidance.
- e. The beginning of the child labor and social service movements.
- f. The guidance movement since 1908.
- g. The field of personal analysis.
- h. School performance as a guide to personal analysis.
- i. Intelligence tests.
- j. Pupil self-analysis, the home visit, and the conference as agencies in pupil analysis.
- k. The field of occupations.
- l. The organization of some important occupations.
- m. The occupation from the view-point of the worker.
- n. Placement and follow-up.
- o. The course in occupations.
- p. Avocational and recreational guidance.
- q. Guidance in health.
- r. Moral and social guidance.
- s. The home visit and other social service.
- t. The appreciation of art, literature, music, and the drama.
- u. The field of curriculum guidance.
- v. Selecting courses of study.
- w. Methods employed in curriculum guidance.
- x. Essentials in a community guidance program.
- y. Counselling the boy and girl.
- z. Guidance through subject instruction.
- aa. The social studies as vehicles for guidance through subject instruction.
- ab. Guidance through English.

- ac. Guidance through other subject instruction.
- ad. Guidance as a teacher service and as a profession.

In February, 1923, each co-operating representative was supplied with a manuscript copy of this suggestive course in guidance, and copies of the Harrisburg trial material. This course already is being given in a number of these institutions, with the understanding that any changes or adaptations are to be made that will prove helpful to students. With an interchange of ideas and material among these institutions, this preliminary work should increase in usefulness. This course, or one corresponding to it, is required in each of the fourteen normal schools for all students preparing for junior-high-school teaching.

3. Graduate Courses

Courses in social case work, occupational placement and 'follow-up,' psychological examination, and the curriculum are being offered in a number of the collegiate institutions. These courses applied specifically to counselling will be featured for experienced teachers desiring to specialize in the guidance field, as the demand for such service increases.

4. Professional Reading and Conference Program in Guidance for Teachers

Material under this heading has been prepared as Part IVB of the General Bulletin. It is intended to serve a series of nine conferences, one a month during the school year, under the leadership of the guidance committee of the school and the school district. A suggestive program for the conference is outlined as follows:

a. The Conference Program

Time, One hour (the time indicated is not arbitrary, and is given merely to suggest a possible apportionment)

- (1) Introductory remarks, Conference leader—3 minutes
 - (a) Meeting called to order
 - (b) Presentation of the topic
 - (c) Introduction of speaker
- (2) The speaker—15 minutes
 - (a) Presentation of one or more cases in his or her experience, appropriate to topic

- (b) Analysis of case—personal characteristics, environment, etc.
 - (c) What was done
 - (d) How similar cases in the school might be cared for through the service aimed at in the present guidance program
- (3) General discussion of case or cases introduced and points made by speaker—conference leader presiding with the speaker answering questions
Time limit not important, if cases presented by speaker cover topic—10 minutes moderate estimate
- (4) General discussion—cases, questions, and opinions presented by teachers—25 minutes
Discussion held to topic by leader
- (5) Summary, by leader—7 minutes
- (6) Meeting adjourned
The material prepared for the reading of teachers, preliminary to these conferences, is presented under the following:
- b. Topics for Discussion*
- (1) The field of guidance
 - (2) The guidance movement
 - (3) Curriculum guidance
 - (4) Personal analysis, tests and measurements
 - (5) Occupations
 - (6) Recreational, moral, and social guidance
 - (7) Guidance in the appreciation of art, literature, music, and drama
 - (8) Guidance through subject instruction
 - (9) Community co-operation

5. Institute Programs

The field of guidance offers very profitable topics for general sessions and department conferences in city and county institutes. A suggestive outline for such addresses and conferences has been prepared under the following headings:

a. Addresses for general sessions

- (1) The guidance of our youth
- (2) Some fundamental concepts in guidance

- (3) Pennsylvania's guidance program
 - (4) Pupil analysis from the point of view of the counselor
 - (5) The school and the community
 - (6) Launching the pupil
 - (7) The field of occupations
- b. *Addresses and discussions for sectional meetings*
- (1) The teacher and the pupil
 - (2) Some helpful guidance devices
 - (3) Guidance through subject instruction
- (These are applied to the problems of the major groups: elementary, junior high, senior high, etc., and to subject groups—English, industrial arts, etc.)

G. Objectives for the Year 1923-24

The following have been set by the Committee and approved by the Superintendent of Public Instruction of the Commonwealth.

1. *Publication and distribution of General Bulletin on Guidance*
2. *Advisory service to trials in Harrisburg, Hazleton, Franklin, and Mt. Union, and to other communities so far as time allows*
3. *Trials in rural communities*

Several typical rural communities selected for this purpose.

The following are in this list:

- a. The consolidated district
- b. The rural vocational school and articulating units
- c. The township district having several community schools under a township superintendent
- d. The small one- and two-school district

(The procedure here is to be exceedingly simple. The indexed cumulative envelope record, perhaps even more simple than at present, will form one of the bases for counseling. If there is more than one school in the district, there will be co-operation among teachers of these various school units in a simplified school council on guidance.)

4. *Development of the Teacher Training Phase*

The teacher conference program (IV B) has been used in university and normal school classes in the summer session of 1923.

and will have further tryout in school conferences during the present year.

Courses in guidance will continue to be given in residence and extension, with eighteen or more institutions undertaking this work.

The guidance institute aspect of the program is now under way, with a guidance institute staff comprising leaders in this field. The articulating committees on guidance appointed by the Departments of County and District Superintendence of the State Education Association are assisting materially in the development of this phase of the program.

IV. ADMINISTRATIVE ORGANIZATION

A. The Articulation of Guidance in the Pennsylvania Department of Public Instruction

1. Guidance Concerns All Bureaus, Subject Directors, and Specialists of the Department

The socialization of the curriculum emphasizes the guidance point of view and little is needed to show its place in a guidance program. With the obvious advantage of having each representative of the Department of Public Instruction stressing the guidance values in his special field, each member has a place in the Department of Public Instruction phase of the state program.

2. There are Three Stages in the Department Phase

a. A general conference of all bureau heads, subject directors, and specialists, to mark the need for a guidance program and to provide for a working committee. This meeting was held May 15, 1921.

b. Individual conferences of chairmen and members of the guidance committee with bureau heads, subject directors, and specialists, in order to develop the right point of view, a workable program, and a necessary co-operation. Many such conferences have been held.

c. The development of concrete guidance material suited to the special fields of bureau heads, subject directors, and specialists, for use in their institute addresses, and conferences throughout the state.

This development has been approved by the Superintendent, and if possible will be begun during the present year.

With the emphasis of the Department so largely on the social aspects of education, it is obvious that this material will be prepared *with* members of the Department staff, rather than for them.

The material, if successfully developed, probably will take some such form as that followed in the teacher conference material section IVB, previously referred to, and about as follows:

- (1) *Cases and incidents* having special appeal to the various types of audiences, and pertinent to the field of the speaker.
- (2) *Brief analysis of the guidance needs* involved in these incidents, and demonstration of the manner in which these needs can be served.
- (3) *References and possibly exhibits* of material prepared for teachers and administrators, that can be applied in local situations.

B. Organization for Guidance in a State Department of Public Instruction

The Pennsylvania Guidance Program is still in a preliminary stage, and it is too early to say just what form should be recommended for state organization and administration.

There is, however, one fundamental that might well be observed. The various divisions of a state department of public instruction are just as vitally concerned with guidance as are the various departments of a city school system, and a state department committee on guidance offers as helpful an articulation as does the committee organization in a school district.

V. IN CONCLUSION

The value of the guidance program is not to be measured in terms of committees and organization. Therefore we have but incomplete measure for our plan in Pennsylvania. We believe the plan fundamental, however, and that it provides for the participation of the many who are vitally concerned. With committees and organization in the background, we are awaiting the more significant returns from classroom, home, and community.

CHAPTER III

GUIDANCE PROGRAMS IN LARGE CITY SYSTEMS

A. INTRODUCTORY

L. A. HERZ
The Lincoln School of Teachers College, New York City

As the following reports indicate, growing numbers of educators have recently come to realize that the curriculum should include more than formal and academic subject matter. While the schools must continue to impart certain so-called fundamental skills and information to every pupil, their obligation does not end there. They must anticipate the time when the pupil shall have completed his schooling and taken his place in the work-a-day world. They must strive to see that this place is such that the pupil may contribute his best to the world and, by so doing, secure for himself the greatest happiness. This desired result can not be left to chance. It can come about only by causing the pupil to consider his own capabilities or capacities and various opportunities for developing them. The school, therefore, must consciously and definitely make provision in its curriculum for accomplishing this result.

An adequate program for educational and vocational guidance should include deliberate and intelligent choices both of educational opportunities and of occupational adjustments.

Although all teachers are certain to realize the need for providing occupational guidance and educational guidance during the intermediate school, continuation school, high school, and later school periods, and though they may do much of both, nevertheless the experienced counsellors or teachers will realize their limitations in this uncertain field, where many difficulties are possible as the result of misinformation and of misdirection. Consequently, a number of perplexing problems confront all school representatives who are charged with the varying responsibilities for assisting pupils in wisely choosing educational and vocational advantages and for imparting reliable information on the relative opportunities and requirements in important occupations.

As many serious mistakes may result from misinformation and misdirection, all school counsellors and teachers concerned should be challenged to overcome those practices which force unreliable information and unwarranted decisions upon growing boys and girls during any stage of their educational development.

All of this suggests that the ultimate success of the school counselling program in any city will depend, not alone upon the training and experience of those directly in charge, but likewise upon the provision which has been made for securing, evaluating, preparing, and using reliable information resulting from studies of the different occupations.

The following portions of this chapter will show guidance programs which are in force in some of the larger cities of the country, viz., Atlanta, Boston, Chicago, Detroit, New York City, and Pittsburgh.

B. GUIDANCE IN THE ATLANTA SCHOOLS

H. H. BIXLER
Director of Vocational Guidance, Atlanta, Georgia

Atlanta was one of the first cities in the United States to organize a vocational guidance department in its public school system. In 1917, the first Director of Vocational Guidance and Educational Research was appointed. The policy of the department is to stress the vocational guidance work in the schools; the director is assisted by vocational counsellors and committees in the high schools and by teachers and committees in the elementary schools. No effort has been made to build an elaborate central office organization or vocational bureau, such as exists in Cincinnati and other cities.

ELEMENTARY SCHOOLS

One of the features of the work in Atlanta is the stress which is put upon guidance in the elementary schools. Since it is generally true that over half of our pupils drop out before they finish the seventh grade,¹ it is most important that vocational guidance be included in the elementary-school program. Of course, we do not advocate that elementary-school pupils be urged to choose a vocation, but we do believe that they should be acquainted in some definite way with the occupational world and its problems. Even the fourth-grade pupils as a whole or in committees may take excursions to places of civic and vocational interest. At present such trips in this grade, as in the upper grades, are planned by the teachers individually, and no uniform plan is followed. It is planned to have these trips organized on a systematic basis, beginning with September, 1923. Each grade will take four trips a year. Two of these will be of moral and inspirational value, visiting such places as the Uncle Remus Home, the Henry W. Grady monument, etc. The other two trips will be vocational, *i. e.*, visits to farms, industries, offices, and schools.

Vocational Guidance may most effectively be introduced into the curriculum of the elementary school through correlation with Eng-

¹Ayres, L. P. *Laggards in Our Schools*. Russell Sage Foundation.

lish, history, civics, and geography. Except in the seventh grade, it has not been deemed desirable to set aside a special period for it. In order to focus the attention of the children on vocational guidance, and at the same time supply the teacher with material, a printed bulletin or advertisement is supplied each week to every teacher. Credit should be given to Dr. R. D. Allen, of Providence, Rhode Island, for originating the idea. In that city, however, the advertisements are limited to the seventh and eighth grades and stress chiefly the value of high-school education. In Atlanta, however, they are being used in the fifth, sixth, and seventh grades and in the high schools. At present the same bulletins are used in all grades, but in the near future, the high-school series will be different from that used in the elementary school. New bulletins are being printed from time to time by the printing department of the Technological High School so as to avoid repetition from year to year. Some of the bulletins advertise the value of high school; others urge the importance of a definite life plan, the danger in blind-alley jobs, etc. The following are typical:

“Many young people cannot tell *where* their real strength lies. *High School* and *College* develop these hidden abilities. Stay in school.”

“Choosing a *life work* is a serious business. The influence which it has on your getting a living is small compared with what it has on building *manhood* and *womanhood*.”

A committee of students assists the school counsellor in posting these bulletins on the bulletin boards in the several classrooms. A space is reserved for this purpose, and a new bulletin is posted every Monday morning.

Standardized tests, both of intelligence and achievement, are being used extensively in the Atlanta schools. Pupils' scores in tests are being used by the seventh-grade teachers as a guide in helping pupils to select high-school courses. No arbitrary rules or occupational intelligence levels have been set up. The intelligence and achievement ages and quotients constitute only one element in the final advice of the teacher-counsellor.

The first definite emphasis on vocational guidance occurs in the fifth grade. The following excerpts from the course of study indi-

cate the correlation possibilities of different subjects: "The history of this grade is almost wholly biographical in treatment. Stress the vocations of the various men studied, comparing their vocations, preparation, etc., with vocations of to-day." "In geography, when studying food, clothing, and shelter, discuss the vocations of the men who produce and manufacture the various articles." "The arithmetic course provides practical problems based on the industrial life of Atlanta and Georgia. In working these practical problems, it is only logical to discuss the vocations and duties of the men and women who face such problems in their daily life." Special vocational guidance projects have also proved stimulating.

Last year, in one fifth grade the class was divided into groups representing technical occupations, mechanical trades, medical occupations, etc. Each group prepared a chart and illustrated their vocations by drawings, cut-out pictures, and objects sewed to the cardboard. Oral and written compositions supplemented the charts.

In the sixth grade, in addition to the bulletins and project methods described above, subject correlations are important. In English, nine theme topics are suggested on the general subject of "Vocational Problems." Debates and dramatizations add interest. In the topical study of history, the vocational point of view can be easily incorporated. In the "Evolution of the Boat," for example, we can trace from the primitive man who had to perform the whole task himself down to the modern shipbuilder who employs an army of specialists.

In geography such questions are considered as: "What are the occupations and standards of living in different European countries? Of the immigrants who come to us? How do these facts affect the choice of vocations made by boys and girls in the United States?" Arithmetic correlates mensuration with problems of the carpenter and work-shop, problems of buying and selling with the commercial life of the city, etc.

In the seventh grade correlations continue along the lines indicated above. Two new features are introduced in this grade. There is a series of guidance lessons, one each week. About a half hour's time is assigned to each lesson. The course is divided into three parts: (1) introductory lessons to show the necessity of work and

guidance; (2) the industries of Atlanta; and (3) education in Atlanta (a study of the high-school courses and certain type occupations to which they may lead). The other new feature is the Vocational Guidance Information Card. On the front of the card, each pupil indicates the subjects he likes best in school, his father's vocation, his own tentative choice of vocation, and other pertinent personal facts. A series of pairs of "work interests" enables him further to analyze his interests and to indicate the type of work which he likes. The back of the card serves as a cumulative record of the teachers' estimates and recommendations for the student. The teacher records her ratings on such qualities as industry, initiative, leadership, etc., as well as the type of vocation recommended and other comments in the light of pupil's ambitions. The seventh-grade teacher also records the pupil's record in the group intelligence tests. When the pupil is promoted to the high school, the cards are sent to the high-school vocational counsellor, who keeps them on file. Near the end of each semester, they are distributed to the teachers for additional ratings. Hence, when a pupil comes to the counsellor for assistance, there is available a composite picture of the student as seen both by elementary-school and high-school teachers. Guidance, therefore, is based on specific information from teachers who have met the pupil in the classroom. When the pupil graduates or leaves school, the card is transferred to the school employment office. Business men are enthusiastic about the value of this cumulative record in helping to select employees. They say that it enables them to pick the person who will make good "promotion material."

The climax of the elementary-school program in vocational guidance is the "Go-to-High-School Campaign." This is carried on in a general way through the whole seventh grade, by means of bulletins, talks, etc. Last year it culminated in an intensive campaign during the month of May. The following plans featured the campaign:

- (1) Interviews by the teachers and frequently by the principal and director of vocational guidance with pupils who said they were not going to the high school.

- (2) Open-house day at all the high schools.
 - (3) Frequent five-minute talks by teachers and principals.
 - (4) Fifteen-minute talks by the director of vocational guidance.
 - (5) Special program by the parent-teacher associations. High-school principal and teachers were invited to speak. The seventh-grade pupils were honor guests.
 - (6) On high-school final examination day, pupils who were exempt from examination were sent to the elementary school from which they had graduated for a short talk.
 - (7) Each high school sent posters to every elementary school.
 - (8) High-school papers and magazines were mailed to all seventh-grade pupils.
 - (9) Street car advertising—an entire issue of "Two Bells," the little house organ of the Street Railway Company; also advertising cards.
 - (10) Co-operation of Board of Lady Visitors, and many other civic organizations.
 - (11) Personal letters from members of the Rotary, Kiwanis, and other civic clubs to all seventh-grade pupils.
 - (12) Seventh-grade graduation exercises, urging "Go to High School." Diplomas were granted, stating that the pupil was "promoted to the high school."
- The value of this campaign may be indicated by the fact that 94.5 percent of the white children and 92 percent of the negroes entered the high school in September, 1923, an increase of about twenty percent over previous years.

HIGH SCHOOLS

One of the most important phases of vocational guidance is educational guidance. This includes not only the assisting of pupils in the choice of courses, but also the more fundamental problem of classification and adaptation of the curriculum to the needs of the individual pupil. The class entering the high schools in Atlanta is divided into three groups according to I.Q. as found in the group tests in the elementary school. Not only do individual teachers adapt the teaching to the intelligence level of the

class, but progress is being made in re-organizing the courses of study. The English department has already done splendid work in outlining the 'minimal essentials' for the group of less ability.

When vocational guidance work in the high schools was first organized, it was carried on by committees of teachers. Beginning with the current year, the chairmen of these committees are designated as vocational counsellors. In two of the four high schools provision has been made to relieve these counsellors of a portion of their teaching duties. Each counsellor is in charge of the vocational guidance cards for the school and supervises the distribution of the cards to the teachers for their ratings. Since the failure problem is one of the most pressing problems in Atlanta, the counsellors are devoting much time to personal interviews with pupils, at the teachers' requests. Their other duties are of the same nature as in other cities.

For several years vocational civics has formed a part of the civics course in the first year of the high school. Nine weeks is at present devoted to these vocational information classes. With the organization of junior high schools next year, this course will be expanded into a semester course, given probably in the eighth grade. Movies, slides, and trips to industries are some of the features of this class.

There is always danger that the vocational guidance activities of a high school be confined to a very small group of failures, 'drop-outs,' or other pupils who voluntarily seek help. In order to secure the attention and interest of the entire student body and lead them to think intelligently about their life work, a number of publicity methods have been utilized. One of the most effective of these has been the vocational guidance bulletins described above in connection with the elementary schools. The proctor, student lieutenant or teacher reads the bulletin as it is posted each week. Posters and charts are also found to be stimulating. During vocational guidance week, elaborate displays are arranged for the main bulletin boards in the corridors. Some of these posters emphasize the importance of a definite aim in life, the danger of drifting, etc. Others illustrate specific vocations, vividly depicting the duties, opportunities, preparation required, and the remuneration in a

number of vocations in which students are most interested. Books and pamphlets from the library supply the necessary data, and form a portion of the exhibit.

Last year a poster contest for cash prizes proved very effective in securing material for vocational guidance week and for the "go-to-high-school" campaign. Another avenue of publicity is the school paper. Short articles appear from time to time. An entire issue of one school's weekly magazine was devoted to a "Vocational Guidance Number." Another 'drive' aimed particularly at the senior classes is the "Vocational Opportunity" campaign. Prominent citizens who are recognized leaders in their respective vocations discuss them in short talks.

The placement function of the vocational guidance department is centralized in the School Employment Office, maintained jointly by the public schools and the Junior Division, U. S. Employment Service. This office is rendering valuable service, not only in finding positions for young people between the ages of 14 and 21, but also in collecting occupational information for use in the schools.

But vocational guidance in Atlanta is not confined to the youthful student. The Atlanta Opportunity School, which registers almost one thousand employed persons in part-time continuation, trade, and business courses, offers both guidance and training to workers, young and old alike. The principal endeavors personally to interview and to advise all applicants for instruction. Another teacher is in charge of the life career class, and assists in placing any students who request assistance.

There are many weak links in the chain of vocational guidance in Atlanta, but all—superintendent, principals, and teachers—are co-operating in such a friendly spirit that each year brings advancement.

NOTE: In September, 1923, since the foregoing account was prepared, the Atlanta Schools were re-organized on the K-6-3-3 plan. Numerous changes occurred with the opening of four new junior high schools. The following salient facts should be noted:

1. Sixty minutes per week has been allotted to guidance activities in the sixth grade.
2. Two counsellors have been appointed in each junior high school—a man for the boys and a woman for the girls. The principal and assistant principal also devote much time to the guidance program.

3. 'Try-out,' or exploratory, courses are being offered in the seventh and eighth grades, or first two years of the junior high school.

4. A course in vocational civics, five periods a week for one quarter, is being offered to the pupils in the seventh grade.

5. The classification of pupils in the junior high school has been perfected through the use of the teachers' estimates in addition to I. Q.'s. Reclassification, if necessary, occurs at the end of the first quarter. A policy of enrichment, rather than acceleration, is in force for the bright classes.

6. A "Counsellor's Interview Card" has been devised to be filled out by any teacher who wishes to send a pupil for interview by the counsellor.

7. Seventeen special classes for subnormal children are in operation in the elementary schools.

C. GUIDANCE IN BOSTON

SUSAN B. GINN

Director of Vocational Guidance, Placement Bureau, Boston, Massachusetts

The work of educational and vocational guidance in Boston can best be described by reference to the accompanying chart.

ORGANIZATION AND FUNCTIONS OF THE DEPARTMENT

The term, "vocational counsellor," as used by this department, refers to the teachers in the elementary and high schools appointed to do counselling in addition to their regular duties.

The terms "vocational instructor" (man) and "vocational assistant" (woman) apply to members of the staff of the central office, who devote all their time to the work of the department.

PURPOSE OF THE DEPARTMENT

The Department of Vocational Guidance is organized to assist pupils of the Boston schools, both while in school and after leaving, in matters concerning educational and vocational direction.

WORK OF THE DEPARTMENT

The work of the department is carried on along three lines: Guidance, Placement, and Follow-Up.

Guidance

Guidance is interpreted to include both educational and vocational guidance.

1. The department has prepared "A Guide to the Choice of a Secondary School" for use in the seventh, eighth, and ninth grades, to direct the attention of pupils to the courses open to them in the high schools of the city, and to urge them and their parents to consider which course will best prepare the children for the higher institution of their selection or for their chosen work.

2. A copy of a bibliography covering the vocations mentioned in the above bulletin has been sent to each vocational counsellor. By an arrangement with the Boston Public Library, copies of the books

listed in this bibliography are available in the central library and in the branch libraries throughout the city.

3. At intervals the department sends to the counsellors pamphlet material giving information regarding labor laws, health, and occupations and industries. In this distribution the department has the co-operation of state departments, banks, the Chamber of Commerce, and large industrial and manufacturing organizations.

4. For the use of high-school pupils and others the department keeps an up-to-date file of more than 200 school and college catalogues. Each year it makes an evening-school drive among the young people who are working. To aid in this, a study has been made of evening-school opportunities in Boston, and a reference list, classified by subjects, has been prepared.

5. For the children in elementary schools the study of occupations is developed in connection with the classes in English, geography, community civics, etc. Classes in occupations are also conducted in schools in certain sections of the city where many children leave school to go to work on becoming fourteen years of age. Visits to industries are undertaken.

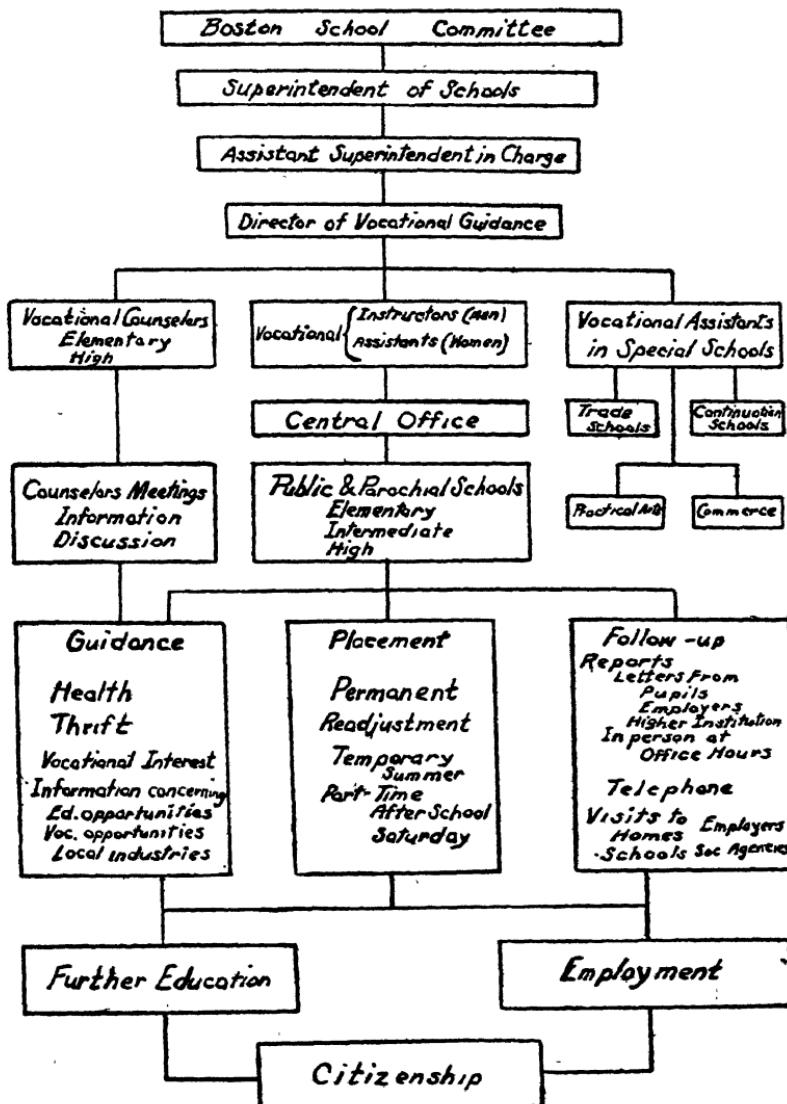
Placement

Placement is of four general types (see chart). The department aims to bring together the right work and the right workers. It bases its placements on a knowledge of the child.¹

The department keeps in touch with employers by telephone, by mail, and by visits by members of the staff to industries and business houses. Vacancies indicated in firms unknown to the department are investigated before placement is made. A record of all registrants of the department known to be working for a firm, whether placed by the department or not, is kept on the work record.

¹The well-developed forms used in connection with the placement, follow-up, registration, and statistics work will be suggestive and valuable to any one interested in guidance work. These forms may be secured by writing to the office of the Director of Vocational Guidance, Boston Placement Bureau, 15 Beacon Street, Boston, Massachusetts.

Department of Vocational Guidance Organization & Functions



Follow-Up

1. Members of the staff, by visits to firms employing young persons, or by letters and cards of inquiry or by telephone, ascertain the kind of work done by employees placed through the department. Through calls at the office during the evening office hours, or on noon hours, reports are obtained from the young persons. Thus the department acts as a clearing house for both parties and is often able to adjust difficulties that otherwise might lead to discharge or to leaving work.

2. From six to nine months after graduation the department gets in touch with each graduate of the general high schools registered, and makes a report to the head master of each school.

3. Registration of high-school seniors is carried on automatically in the spring of each year. Elementary-school graduates and 'drop-outs' and high-school undergraduates who apply at the central office for assistance are required to bring the personal record filled out by their teacher. The facts on this temporary record are transferred to the permanent card. All these records are filed in the central office. On the continuation card a chronological record is kept of all contacts with young persons up to the age of twenty-one years.

4. These registration cards serve also as a basis for several kinds of research studies. The information they contain provides an opportunity for the department to compare training in school with the actual needs in the commercial and industrial world. For example, the statistics on the graduates of general high schools in 1922 show that of the 1916 graduates (776 boys and 1140 girls), 630 (307 boys and 323 girls) are attending higher institutions of learning full time. Included in this group are 30 colleges, 5 public and 7 private normal schools, 7 art and music schools, 3 nurses training schools, 1 public and 11 private business schools, 5 trade and vocational schools, 11 other private schools, 11 post-graduate courses in public high schools, 5 schools not classified. Of the graduates 1058 (363 boys and 695 girls) are at work; of this number, 214 (128 boys and 86 girls) are taking evening courses.

Methods of Acquainting Pupils With Educational Opportunities

Within the School System

1. Bulletin No. 2, 1922, entitled "A Guide to the Choice of a Secondary School," prepared for 7th- and 8th-grade pupils to aid in the selection of the high-school or trade-school course most likely to be of advantage in preparing for a stated vocation, also presents information regarding evening schools and the continuation school. (Prepared by the Department of Vocational Guidance.)
2. Bulletin No. 2 is supplemented by a bibliography for the use of pupils and teachers, covering the occupations and professions mentioned in this document.
3. Counsellors in the elementary and high schools advise and assist pupils in the choice of high schools and colleges. In many high schools the teachers act as special advisers for the particular colleges of which they are graduates.
4. Visits to secondary schools and industries are made by groups of elementary pupils accompanied by counsellor or teacher. The purpose is to help the pupil choose a vocation and the best method of preparation for it.
5. High-school principals or their representatives visit elementary schools from which they draw pupils and address members of the graduating classes.
6. Deans and other representatives of colleges and special schools address high-school senior classes in reference to the opportunities in the particular colleges or schools which they represent.
7. Members of the staff of the vocational guidance department address senior and other high-school classes in reference to the purposes of this department, which includes educational as well as vocational guidance.
8. The Vocational Guidance Department keeps an up-to-date file of over 200 school and college catalogues for use of counsellors, pupils, and graduates.
9. The Vocational Guidance Department makes a special drive each fall to interest high-school graduates and 'drop-outs,' who are working or wanting work, in evening-school opportunities in Boston.

10. A classified list has been prepared showing all evening schools, public or private, giving instruction in any subject. At present, the list consists of 66 different institutions for boys and 88 different institutions for girls. All subjects taught are classified under the headings Trade Courses, Preparatory Courses, Professional Courses, Business Courses, History, Science and Language Courses, etc., with numbers referring to an alphabetical key of the schools, thus making it easy to ascertain every school in the city giving instruction in any desired subject.

Outside the School System

1. Co-operation with the Chamber of Commerce.
2. Talks to parent-teacher associations and church organizations by members of the staff. The director is on the speakers' list of the Massachusetts Parent-Teachers Association and National Civic Federation, and has many more calls both inside and outside of Boston than she can possibly fill.
3. Newspaper and magazine articles.

D. GUIDANCE IN CHICAGO

ANNE S. DAVIS

Director Vocational Guidance, Department of Public Schools,
Chicago, Illinois

This center for junior employment problems conducts the following activities: (1) certification of fourteen- to sixteen-year-old workers, (2) placement, (3) counsellelling, (4) industrial study, (5) publicity.

CERTIFICATION

Certification is carried out under the child labor law and involves careful inspection of documents, physical examinations, elaborate co-operation with Compulsory Education and Continuation Schools, and work with numerous social agencies on individual problem cases.

PLACEMENT

Placement is carried as a voluntary function to aid any junior from 14 to 20 years in securing suitable work under approved conditions and with intelligent appreciation of opportunities ahead. Young people of elementary-school attainment only present problems so different from the high-school graduate that the work is divided on this basis. Placement of high-school graduates is carried on with co-operation of high-school advisers.

A special adviser for handicapped children works for the adjustment in school or at work of children physically or mentally handicapped.

COUNSELLING

Counsellelling is carried on by all members of the vocational staff as they come into contact with children presenting special problems. It is more specifically the duty of district and high-school advisers.

District Advisers

District advisers, members of this staff, work in elementary public schools. They do case work with pupils under sixteen, de-

sirous of leaving school for work, with a view to retaining them in school where work is not financially necessary. This sometimes is accomplished by transfer to another type of school. They co-operate with social agencies in the field. District advisers also meet pupils of upper grades in groups for discussion of problems of educational and vocational opportunities, and work with the high-school advisers to secure high-school enrollment.

High-School Advisers

High-school advisers are teachers appointed by high-school principals to carry out in each high-school a vocational guidance program. The free time allowed to the advisers for this work varies according to the exigencies of the high-school program and the elements in the program which they are able to carry out vary in consequence. The high-school advisers meet each month at the central office for a discussion of projects and problems.

In so far as possible they carry out the following program:

Duties of the High-School Adviser

1. In elementary schools tributary to the given high schools, to put before the eighth-grade pupils information concerning the different courses in the high schools, to assist in a wise choice of school and course.
2. To confer with maladjusted pupils in the high school, especially 1B pupils falling below grade in two or more subjects, at the end of each five-week period.
3. To investigate the cases of pupils who leave during the term, with a view to inducing them to stay if advisable, and to be responsible for the issuance of school records prerequisite to employment certificates for pupils under 16 who must work.
4. To distribute and utilize material prepared by the bureau. (See Publicity.)
5. To present vocational opportunities to pupils by means of lectures, reading matter, a course in occupations, etc.
6. To study systematically the abilities and qualifications of individual students. To interview all pupils above the second year of the four-year course, and every student in the final semester of

the two-year course. To induce the latter in so far as advisable to continue in the four-year course.

7. To carry on placement in co-operation with the central bureau. (This involves the securing and forwarding of records and estimates of pupils' abilities.)

8. To consult with students expecting to enter college as to entrance requirements, cost, and vocational opportunities. To provide for students a source of information along these lines.

Certification, placement, and counselling are end activities which can be carried on intelligently only through full use of the work of industrial study and publicity.

The visiting teacher is the arm of the principal reaching out into the homes. For the one school in which she works, the visiting teacher is vocational adviser, and doing more detailed work than is possible to a district adviser.

INDUSTRIAL STUDY

Industrial study is the basis of the preceding fields of work. It aims to prepare, keep up-to-date, and render useful a complete survey of the industrial field as it affects juniors. This is done by visits to places of employment and case records of the same, including testimony of workers, and by the collection of published material on vocations and vocational opportunity. Investigations of establishments are undertaken to solve particular problems arising in certification and placement, as well as in groups for basic industrial information. As information becomes available, it is taken up in staff meetings. (All members of staff participate in securing information.) This division works with the State Factory Inspector to define the processes forbidden to minors as hazardous, and to prevent violations; and with the Industrial Board to secure justice for children suffering industrial accident.

PUBLICITY

Publicity involves the preparation for pupils, advisers, and teachers, of information along the lines of educational and voca-

tional opportunity. The material includes posters, fliers,¹ pamphlets and mimeographed material. The director and an assistant work over the materials collected by the industrial studies division or by groups of advisers and the directors of various branches of the school system. In meeting various groups, such as school principals, business federations, clubs, social workers, etc., the director also advances the work of the bureau.

¹In print are:

- “Illinois Laws Which Protect Boys and Girls at Work” (Child Labor and Continuation School Laws).
- “After High School?” (The public school opportunity beyond the high school).
- “Information for Prospective College Students.”
- “Are You Thinking?” (Information for 8th-grade graduates on high-school courses).
- “A Chance for Every Child” (Public school opportunities for handicapped children).
- “Vocational Guidance News and Periodical Review” (Issued monthly, September to May).

A Series of 26 Bulletins on Occupations (4 p. folders):

Accounting	Drafting	Law
Advertising	Employment Management	Library Service
Architecture	Engineering	Nursing
Banking	Farming	Pharmacy
Business Executive	Foreign Commercial Service	Private Secretary
Chemistry	Household Arts	Salesmanship
Civil Service	Industrial Art	Social Service
Contracting	Journalism	Teaching
Dentistry	Medicine	

E. GUIDANCE IN DETROIT

A. H. EDGEERTON

Teachers College and The Lincoln School, New York City, formerly Supervisor of Vocational Information and School Counselling, Detroit, Michigan.

During the past three years the Detroit Board of Education has been committed to a policy of providing for continuous counsel with children, not only during their secondary school attendance period, but during the early employment training and adjustment periods as well. Consequently a rather comprehensive organization has been developed for providing systematic counsel and guidance to parallel the intermediate school, continuation school, high school, and specific vocational instruction. As will be explained somewhat in detail, this system attempts to furnish all pupils with reliable information regarding important educational and occupational possibilities.

The various kinds of information pertaining to occupational opportunities and employment requirements have been made available in the form of source-bulletins for the use of counsellors, house principals, teachers, and pupils. As may be noted more fully in Chapter V, this reliable information has resulted from continuous investigations and analyses of the various important industrial, commercial, and professional occupations. In keeping with the stated policy of the board of education, such factual material as is needed for considerations relative to the nature of work, the advantages and disadvantages, the qualifications and training, the possibilities, the remuneration and advancement, and the like is collected first-hand. These data are evaluated and prepared for convenient use in intermediate schools, continuation schools, high schools, and special classes, as a part of the whole program for providing systematic educational and vocational guidance.

DUTIES OF THOSE CHARGED WITH GUIDANCE

These valued facts dealing with relative opportunities and requirements in different occupations are prepared for, and used by, qualified school representatives who are sufficiently free from class-

room teaching and disciplinary problems to have the following responsibilities:

(1) *Providing initial interviews and conferences*, especially for classifying pupils and for encouraging those who are entering the school to think more seriously of their educational advantages and occupational possibilities. It is attempted to have all boys and girls interviewed regarding these problems, either individually or in small groups, or both, during the early part of the first year.

(2) *Following-up and helping to adjust pupils* who did not succeed in making tentative plans during their first year or years. Pupils are encouraged to consult with their school counsellors or advisers whenever they have any general or specific questions pertaining to the election of, or preparation for, life occupations.

(3) *Arranging group meetings to hear talks* by those who are especially qualified to speak and to answer questions about their chosen occupations. Conferences often are made optional for pupils who, having made tentative decisions, can benefit by talks from unbiased men and women who have succeeded in their callings.

(4) *Providing occupational studies* in separate classes and by assisting teachers of English, social science, physical science, health education, practical arts, vocational subjects, etc., for imparting related occupational information to show relationships between the subjects of instruction and the occupations which involve them. (This usually results in making courses of study that will respect individual needs and capacities.) These occupational studies, which have become recognized parts of the courses of study in several subjects, include such considerations as importance of work, constancy of demand for employment, working conditions, qualifications and training needed, possible rewards and advancement, etc., in order to help pupils who continue their school work to select programs of training and courses in higher education more wisely, and to help those who find it necessary to leave school with a minimal amount of education to choose and plan their procedure more thoughtfully.

(5) *Co-operating with teachers in keeping cumulative records* of each pupil's performance both inside and outside (where possible) of school. Counsellors and other school representatives are inter-

ested in the results of tests of general intelligence as a basis for general classification, but they also recognize the importance of interpreting these records of a general measure as only one of the many factors resulting from testing pupils' abilities and interests in various ways through school and outside performance.

(6) *Co-operating with the department which issues working permits* to children who are leaving full-time school, but are required by law to attend continuation classes for eight hours a week. It is attempted to interview each applicant at the school before a formal request for this permit is made at the central office of the Attendance Department where it is issued.

(7) *Co-operating with all other school and outside agencies* which interview parents and children, investigate home and working conditions, and in any way pass upon the advisability or necessity for individual children to leave any particular school or to be transferred from one school to another. Every effort is made to solicit the co-operation of parents and others concerned in helping children to select suitable courses of study or training programs in preparation for their occupational interests or chosen plans.

(8) *Co-operating with the placement officers, co-ordinators, and others that advise, place, and adjust boys and girls who are qualified for part-time work, who desire positions upon leaving schools, or who wish to transfer to other employment.* Each pupil who has decided to leave school benefits to some extent by the supervision of his employment contacts and training adjustments, and his employer unquestionably profits either directly or indirectly by this clearing-house for information that is available and needed.

Although the importance of each provision will be evident to those who are confronted with such responsibility, it is obvious that the nature, method, and extent of each one of these necessarily will be determined largely by adaptations to the particular levels of learning in question. In other words, school counselling and guidance should recognize the significant differences which are involved in meeting the needs and respecting the interests of boys and girls in intermediate schools, continuation schools, high schools, and each other stage of educational development.

INTERMEDIATE (JUNIOR HIGH) SCHOOLS

The demands which were primarily responsible for the development of the intermediate-school organization in Detroit imply systematic counsel for each pupil throughout the so-called "self-finding" period in the seventh, eighth, and ninth grades. For this reason, it is arranged for one or more counsellors (see Diagram I) in each school to be sufficiently free from classroom teaching and disciplinary responsibility to interview boys and girls regarding the choice of their life work and the selection of courses in preparation for specific occupations. Not only do these full-time and part-time counsellors consider it their duty to advise pupils during their entire school attendance and training periods, but they also provide appropriate educational and vocational facts for all pupils concerned.

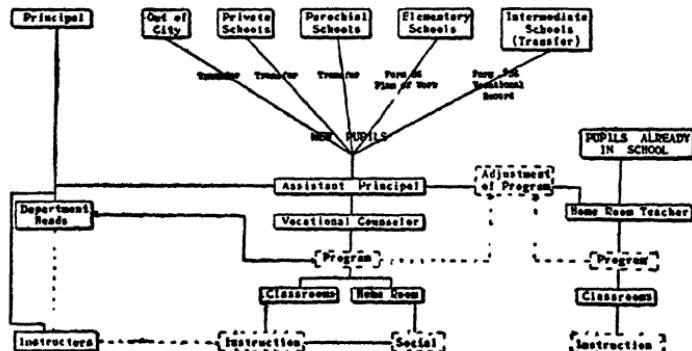


DIAGRAM I.—SHOWING GENERAL ORGANIZATION AND PUPIL ROUTINE IN INTERMEDIATE SCHOOLS

The initial group meetings and interviews which the counsellors and home-room teachers have with the seventh-grade pupils who are entering the junior high schools for the first time, are concerned mainly in encouraging them to think more seriously regarding the problems of their life work. Since it is necessary at the end of this year for each pupil to choose between such courses as general, com-

mercial, technical, household arts, and industrial, all of which have a number of studies in common, it is desirable to impress these children with the importance of understanding the different types of occupational activity that these courses represent. If possible, all of the boys and girls are interviewed either individually or in small groups during the seventh year. At the outset, it sometimes proves more satisfactory for the counsellors to meet pupils in small groups because of the stimulation which comes from having those pupils who feel free to talk to the other members of the group, explain their future plans. In any case, pupils are encouraged to consult with their counsellors whenever they have any questions or plans regarding either the selection of, or the preparation for, their life callings.

As a result of these conferences and interviews during the seventh year, a part of the eighth and ninth years is devoted profitably to the adjustment of those pupils who did not succeed in making at least tentative plans for their life work. In addition to these individual conferences relative to educational and occupational plans, group meetings are arranged to provide suitable talks for those who are beginning to ask questions and to evidence special interest in the opportunities and requirements of certain divisions of the professional, the commercial, the industrial, the household, and even the agricultural vocations. Several of these conferences are made optional for those who have made tentative decisions and can benefit by talks from men and women who have succeeded in their respective callings. Of course, the ninth year emphasizes, even more strongly, the advantages in making intelligent decisions and definite preparations for their chosen careers. Following the general 'try-out' courses and occupational considerations in the seventh year, the eighth- and ninth-grade studies, interviews, conferences, and talks not only become more intensive, but give increasing attention to the presentation of facts in keeping with the particular interests of the pupils. This usually is arranged with little administrative difficulty, since the pupils in these years are already grouped according to the courses which they are pursuing.

Although the vocational counsellors are interested in all tests of general intelligence, they undertake to interpret the results of these

tests as only one factor to be considered along with other information resulting from the pupils' performance, both inside and outside of school. All classroom and home-room teachers, who naturally have rather intimate contact with their pupils, give valuable assistance in furthering the vocational and educational guidance program (1) by reporting upon individual pupils, (2) by imparting related occupational information, and (3) by showing the connection between these vocations (occupations and professions) and their respective subjects of instruction.

CONTINUATION SCHOOLS (BOYS' AND GIRLS')

Because the effectiveness of part-time instruction depends to a large extent upon the development of a suitable system of guidance and co-ordination, the counselling for part-time pupils is considered an indispensable part of the programs for both the boys' and girls' continuation schools. It is the duty of the counsellors to provide individual and group conferences for stimulating all pupils enrolled in these schools. The counsellors for these junior workers are responsible for acquainting new pupils with the provisions of the compulsory attendance law with special reference to school attendance, working permits, and junior employment service, as well as for assisting them in making proper vocational choices.

The co-ordinators, with the aid of the counsellors, attempt to connect the activities of the school, the occupation, the home, and the community. The nature of the co-ordinators' positions allows them to assist the school officials and teachers in maintaining instruction which reflects the requirements made upon the junior wage-earners and also to inform the employers of the educational opportunities which are, and can be, provided by the school system with their co-operation.

The counsellors also assign pupils to their school programs, which are determined by current employment and vocational choice; recommend necessary adjustments in pupils' school programs from time to time; suggest desirable adjustments in employment to best serve the interests of individual pupils; impart vocational information to sponsors, teachers, and pupils; and recommend suitable

applicants for positions to be filled by the employment division. These counsellors also co-operate with the department responsible for issuing working permits to children who are leaving full-time school, but are required by law to attend continuation classes for eight hours of each week. It likewise is an important part of the counsellors' work to co-operate with this and all other agencies and school representatives who interview parents and children, investigate home and working conditions, and in any way pass upon the necessity for individual children to leave school during the compulsory attendance age.

HIGH SCHOOLS (COMPREHENSIVE AND TECHNICAL)

The different types of high-school organization in Detroit necessitate a somewhat varied practice in school counselling. Diagram II

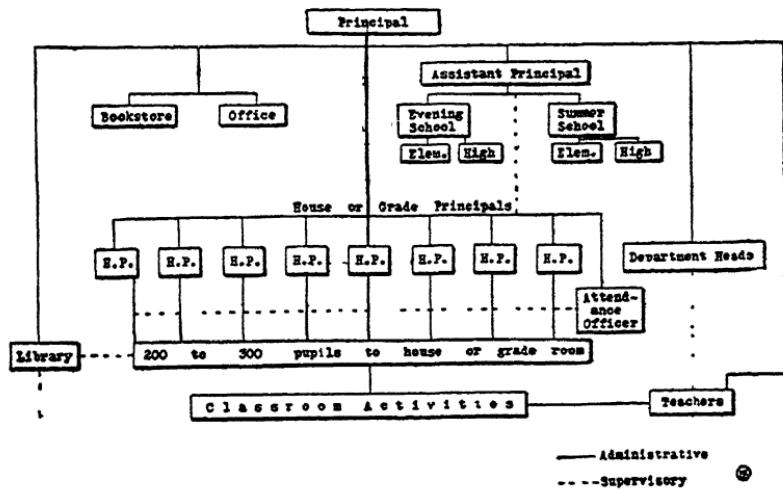


DIAGRAM II.—SHOWING TYPE OF ORGANIZATION IN MOST DETROIT HIGH SCHOOLS

shows the type of organization which is to be found, with slight modification, in a number of the largest high schools in the city. There is little fundamental distinction between the so-called "house principalship" and the grade room organizations. In the former organization, students are assigned alphabetically to "houses" of

from 200 to 300 or more students, and they ordinarily remain in these "houses" throughout their entire high-school careers. The pupils are segregated on the basis of sex; boys and girls report to their respective "houses" for daily record and study during vacant periods, unless assigned to the library. Each house principal is responsible for the pupils' programs, records, attendance, and for the establishment and maintenance of contact with parents. Since these house principals are responsible for educational and vocational counselling in their respective "houses," it often is found desirable to have all of them in one school act as a committee. The central office is in a position to assist house principals through making available effective clearance facilities for information¹ and through sending to the "houses" specialists for individual or group conferences whenever there is need for such supplementary assistance, as is occasionally the case during periods of course adjustment or immediately preceding part-time or full-time employment.

The grade room system represents a slight modification of the above plan in that students are assigned by grades rather than alphabetically and, in addition, there is no sex segregation. Much valued assistance is given to pupils by the regular teachers through the enrichment of their courses by including vital occupational information, all of which supplements that personal service rendered by the grade room teachers. All school counsellors or advisers are held responsible for individual and group conferences, whenever these seem desirable. It is in this connection that the central office finds an opportunity to render an important service through sending specialists who are constantly in touch with the opportunities and requirements in various kinds of employment.

A type of organization which is quite different from either the house principalship or grade room plan is represented by the technical high school. The assignment of two counsellors in this organization makes it possible to adjust students within the various departments of the entire school organization. The introduction of "group heads," who are charged with the responsibility for instructional provision to meet the needs of their respective groups,

¹See the report of one type of program in a high school of this kind in Chapter V.

affords exceptional opportunity for the effective adjustment of students both in the day, and in the evening or senior continuation schools, which operate as a unit organization. The assignment of students for instruction and adjustment takes place through group sponsors. In this connection, perhaps it should be mentioned that the preliminary assignment of students for instruction in any department or group is based upon acceptance of the vocational counsellors' decisions by the group heads or their representatives. The vocational counsellors act as heads of educational and vocational guidance activities for the whole school organization.

SUMMARY AND CONCLUSION

The great need and opportunity for dealing wisely with the problem of an efficient choice suggests that each pupil's decision should result from careful reasoning. Therefore, this decision might well be based upon an understanding of the pupil's resources and limitations and also upon some knowledge of the economic facts, personal relationships, and relative values involved in selecting a suitable life occupation and preparing properly for it. Whenever these studies and related experiences have been based upon actual facts and have received proper attention, they have not only vitalized the respective courses of study, but have also contributed materially to an intelligent understanding of the different aspects of occupational work.

In Detroit, and likewise in several other cities, it has seemed advantageous to make qualified school representatives directly responsible for (1) providing initial interviews and conferences; (2) following-up and helping to adjust pupils; (3) arranging group or class meetings for studies about occupations; (4) assisting teachers of English, social science, physical science, health education, practical arts, and vocational courses in imparting related information; (5) co-operating with heads of departments and teachers in making courses of study and keeping suitable records; (6) co-operating with attendance teachers and working permit officials; (7) co-operating with placement officers, co-ordinators, and other allied departments and agencies.

The situation of child employment in Detroit is not much different from that confronting such other cities as St. Louis, Cincinnati, Philadelphia, and New York, where about 91 percent of the children who leave school at this period enter unskilled occupations, less than 7 percent enter semi-skilled occupations, and only about 2 percent enter more highly skilled occupations. The urgent need for adequate counsel, training, placement, and follow-up is obvious when we realize that approximately 72 percent of all part-time or continuation-school children necessarily enter positions which are more or less of the so-called 'blind alley' nature, in so far as future possibilities in these particular jobs are concerned.

Finally, there are many evidences of an increasing realization by employers of the desirability for co-operating with the public schools in order to eliminate unnecessary waste in excessive turnover and in other undesirable relationships which are inevitable results of this hit-and-miss system of 'hiring and firing.' In other words, more and more employers have co-operated because they have realized that our mutual problems can be minimized by the systematic guidance, placement, and follow-up work which are being gradually developed for the benefit of all concerned. They likewise appreciate that the public school system is the most effective agency, or clearing-house, from which they may secure desired records of individual performance and conduct as well as other valued information and assistance.

F. GUIDANCE IN NEW YORK CITY (Vocational Service for Juniors)

MRS. ALICE K. POLLITZER
Director Vocational Service for Juniors, New York City

The Board of Education makes practically no provision for vocational guidance in the public schools of New York City. One vocational high school has a full-time vocational counsellor; several vocational high schools have employment departments; a central employment office is maintained for the remaining high schools. Two continuation schools have teachers especially assigned to employment and vocational guidance work.

The most important vocational guidance work in the city is carried on by the Vocational Service for Juniors, a privately supported organization, conducted through a board of managers with a board of advisers. An outline of the work of this organization follows.

GENERAL PURPOSE

The Vocational Service for Juniors, though privately supported, works almost as an integral part of the public school system, and is directing its efforts toward being taken over by the Department of Education. Its aims are:

1. To assist pupils to make an intelligent choice of their next step in education or, if necessary, of work;
2. To give scholarships to such as would be forced out of school by economic conditions, to enable them to get the education and training that seem likely to develop their highest powers;
3. To place workers under eighteen years of age in investigated positions, chosen as far as possible to meet their needs and ambitions, and to follow them up when placed, by means of evening office hours and visits to employers.

STAFF

In the central administrative office there are employed director, assistant director, psychologist, assistant psychologist, scholarship

secretary, counsellor in charge of employment clearance, and clerical workers.

In schools and employment bureaus under the direction of the central administrative office are employed ten counsellors working partly in schools and partly in employment bureaus, and clerical workers.

ACTIVITIES

A. Educational and Vocational Counselling

The methods used in the five elementary schools and in the four junior high schools in which the Vocational Service for Juniors works are indicated by the following outline.

1. *Procedure in Schools*

1. The director calls an early term conference of principal, the teachers concerned, visiting teacher, and nurse, with the counsellor assigned to the school and the staff psychologist to consider: (a) the aims and methods of the Vocational Service for Juniors; (b) the organization of the school, *i. e.*, the variety of courses, possibilities of change, etc. These conferences and consultations are repeated with individual teachers and nurses as occasion demands, by the director, the counsellor or the psychologist.

2. The staff psychologist, with assistant, gives group psychological tests, trade tests wherever indicated, and individual tests, on recommendation of teacher, psychologist, or counsellor, as follows: (a) for the junior high school, in the 7th grade, to decide on the course in the junior high school, and in the 8th grade wherever a student is not making good, as shown by his school record or whenever the teacher is in doubt of the wisdom of his choice; (b) in 8th-grade schools, to Grades VII-B, VIII-A and VIII-B if not already tested; (c) to pupils applying for working papers, and as far as possible to all over-age pupils.

3. Under the direction of the counsellor, pupils in classes fill in questionnaires showing something of the economic and social background of the family and of the aptitudes, interests, and ambitions of the child. The returns are kept by the counsellor.

4. The counsellors give talks on occupations in the 7th, 8th, and 9th grades, based on trade and occupational studies and on actual experience in the employment bureau, and including in simple terms the historical development of present industry, the functions of employers' associations and labor unions, and business and social ethics.

5. The counsellors conduct excursions to high schools, industries, exhibits, etc.

6. Moving pictures showing conditions and processes in industry are shown in connection with occupational talks.

7. The counsellors interview and re-interview pupils of the 7th, 8th, and 9th grades as indicated above, and also applicants for working papers.

8. The counsellor sends the child's record and the report of guidance based upon it to the continuation schools if he be obliged to attend one, and to the employment bureau to serve as a basis for his choice of course or of job.

2. Procedure With Parents

1. Conferences are held with parents at the school, by the counsellor.

2. Home visits are made by the counsellor or wherever there is a conflict between the choice of the parent or child and the counsellor's point of view, if the parent fails to confer with the counsellor in school.

3. Literature is distributed from the administrative office in simple form in English, Yiddish, and Italian, stating the value of further education and training and the opportunities offered by different types of schools and courses.

3. Co-operation With Social Agencies

Directors and counsellors co-operate with various social agencies with respect to recreational and educational opportunities and also with respect to the problems of individual children.

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B. Scholarships

The scholarship secretary investigates all requests for scholarship aid sent by teachers, counsellors, and social agencies and recommends candidates to the scholarship committee. She also keeps a careful follow-up record, through personal contact, of all children who have received, or are receiving, scholarship aid.

C. Employment

Two employment bureaus are maintained in the continuation schools; one in the employment certification office, and one for children 16 to 18 years old in the Kips Bay Neighborhood Association. School counsellors give part time to the placement work of these bureaus, and to industrial investigations.

G. GUIDANCE IN NEW YORK CITY
(West Side Continuation School)

BERTHA LUCHS

Counsellor West Side Continuation School, 208 West Thirteenth Street,
New York City

Vocational Guidance is the foundation of the Continuation School. The following plan is that which has been developed in the West Side Continuation School and is at present being used there. There will be outlined the work of the preparatory class, the employment bureau, the trade class, the academic class, the assemblies, the follow-up work, and miscellaneous ways and means of accomplishing guidance.

There are two counsellors (known as preparatory class teachers); one, a man, who deals with the boys, and the other, a woman, who deals with the girls.

PREPARATORY CLASS

A. Pupil partially fills out Vocational Service Record, which consists of:

1. Pupil's name
2. Date of admission
3. Date of birth
4. Nationality
5. Name of parent or guardian
6. Pupil's address
7. Date of interview
8. Class
9. Day of week
10. Teacher
11. Previous school record
12. Physical record
13. Social record
14. Pupil's future plans (employment)
15. Personal characteristics
16. Tests (nature, date, results)
17. General remarks
18. Vocational counsellor's recommendations
19. Results
20. Progress record
21. Occupation record

- B. Pupil reads and follows directions of the booklet, which consists of:
 - 1. Definite directions to the pupil
 - 2. Words of welcome
 - a. Extracts from part-time law
 - b. What part-time school can do for pupil
 - c. Courses of work
 - d. Occupational information
 - e. Choice of an occupation
 - f. Directions for filling out folder
 - g. Suggested "reading list"
 - h. List of social, educational, and civic centers
 - i. Tests
 - (1) Achievement
 - (2) Intelligence
 - j. Series of questions based on topics contained in booklet
- C. Pupil is personally interviewed by the vocational counsellor, who completes vocational service record.
- D. Pupil is physically examined by physician and co-ordinated with own physician or clinic.
- E. Talk given by vocational counsellor. Topic, "Planning Your Future"
 - 1. Analyze self
 - 2. Knowledge of field of occupations
 - 3. Important things to be considered in choosing an occupation
 - a. Ability for the work
 - b. Wages (at beginning and at end)
 - c. Opportunities in the work
 - d. Education and training required
 - e. Physical conditions encountered
 - 4. Choice of work
 - 5. Recommended reading
 - 6. Where to get required information
 - a. People in work
 - b. Books, Library
 - c. Continuation school
- F. Reading books
 - 1. Vocations for Girls—Weaver
 - 2. Vocations for Boys—Weaver
 - 3. Occupations—Gowin and Wheately
 - 4. Vocational Civics—Giles

5. Getting a Living—Barnard
 6. Hygiene for the Worker—Tolman
 7. Special studies made by the teachers of the West Side Continuation School
- G. Pupil is assigned to class:
1. According to choice of future occupation
 2. According to present employment (for extension training)
 3. To try out vocation to find self; to find what not to do
- H. Co-ordinated with educational, social, and physical centers
- I. Co-ordinated with Employment Bureau (Vocational Service for Juniors—Branch in West Side Continuation School)

EMPLOYMENT BUREAU

(Vocational Service for Juniors)

- A. Junior interviewed
- B. Counsellel
- C. Placed in employment according to special aptitudes and desire, if possible
- D. Scholarship fund
- E. Follow-up in employment

TRADE CLASS

- A. Talks on trade and allied trades.
 1. Work to be done
 2. Advantages and disadvantages
 3. Personal qualifications required
 4. Wages (at beginning and at end)
 5. Opportunities for advancement
 6. Health conditions
 7. Education and training needed
 8. Supply and demand
- B. Assigned reading; books and articles relating to trade and allied trades
- C. Laboratory method; trial in shop, checked up and reported in writing to vocational counsellor after 6 weeks
- D. Individual guidance; co-ordinated with educational and social centers, also with industry.

ACADEMIC CLASS

- A. Occupational talks and discussion.
 - 1. Work to be done
 - 2. Advantages and disadvantages
 - 3. Personal qualifications required
 - 4. Opportunities for advancement
 - 5. Wages (at beginning and at end)
 - 6. Health conditions
 - 7. Education and training needed
 - 8. Supply and demand
- B. Health talks
- C. Readings from vocational bibliography
- D. Written English
- E. Individual guidance; co-ordinated with educational and social centers, also with industry

ASSEMBLIES

- A. Talks
 - 1. Occupational
 - 2. Health
 - 3. Inspirational (character building)
- B. Moving pictures
 - 1. Industry

FOLLOW-UP**A. Vocational Follow-Up**

Six weeks after the pupil has been classified, he is reported upon by the teacher, to the vocational counsellor. If he is satisfactorily placed, he remains in the group; if not, he is re-interviewed. Sometimes he is given another six weeks' trial, after which he is reported upon again; and sometimes if his record is very poor, meaning that he is very badly adjusted, he is re-classified and reported upon under the new environment after having had a six-weeks period of re-adjustment. The pupil is kept in contact with the vocational counsellor until he is happily adjusted. This sometimes covers a period of eighteen weeks. At any time after a six

weeks' trial period a pupil may change his course if he has advised with the vocational counsellor.

B. Physical Follow-Up

Three weeks after the pupil has been physically examined, the nurse follows up the case to see if the pupil has done what the doctor has suggested.

MISCELLANEOUS WAYS AND MEANS

- A. Teachers visit industry
 - 1. Report on visit
 - 2. Bring back to school and class suggestions made by industry
- B. Teachers visit educational, social, health centers, and homes.
- C. Teachers' conferences
- D. Close co-operation with Y. W. C. A.
 - 1. Club (Tuesday evenings)
 - 2. Dances
 - 3. Summer camp

H. GUIDANCE IN THE PITTSBURGH PUBLIC SCHOOLS

EDWARD BYNEARSON

Director Department Vocational Guidance, Pittsburgh Public Schools,
Pittsburgh, Pennsylvania

The organization of the Department of Vocational Guidance in Pittsburgh consists of a director, one research secretary, two secretaries for the children between 14 and 16 who apply for working certificates, four secretaries in the placement office for persons over 16 years of age, and fourteen counsellors (one for each high school).

The Research Secretary works under the special direction of the Superintendent of Schools. At present, he is engaged on the problem of high-school 'drop-outs.' He visits many homes from which the high-school principals can get no response. His visits reveal the fact that many parents do not know the value of education nor the opportunities offered by the public schools. When the different courses of the high school or the special schools or courses are explained clearly to the parents, many pupils are returned to school.

Each child between 14 and 16 years of age who has completed the sixth grade and who wishes a working certificate must bring one of his parents to the placement office, located in the same building with the Continuation School and the Compulsory Attendance office, where the certificate is issued. The child brings a copy of his school record from the principal. An effort is made to learn from both parent and child the real reason for the child's application and the attitude of each toward education.

If the facts justify it, every effort is made to return the child to school. If it is shown that both parent and child are anxious for more schooling, but that it would be impossible for the child to return to school on a full-time basis, then the part-time school is recommended.

If the child has no position, but insists upon going to work, an effort is made to place him in a position suited to his needs. The employer is then interviewed, either personally or by telephone, to ascertain the child's progress. The child is interviewed from time

to time on the days he is in school. In these interviews, an attempt is made to instill high ideals and wholesome attitudes toward his work and his fellow employees. Just before the child reaches his sixteenth birthday, he is given another conference in which the need for further schooling is emphasized, and the opportunities offered in the day and evening schools are stated. Attention is also directed to that branch of the Department that helps young men and women from sixteen to twenty-one years of age.

The placement office for young men and women between sixteen and twenty-one years of age co-operates with the Junior Department of the United States Employment Service. When applicants enroll in this office, they fill out "personal record cards" which give in detail the history of the case including school, occupational and family data, personal ambitions, handicaps, and a personal description of the applicant. While the records are being taken, characteristics, both favorable and unfavorable, are noted in detail, including such items as dress, appearance, mental and physical reactions, approach, and attitude. The secretary's estimate is often checked by following up school and employment records.

It is often possible to obtain this information immediately over the telephone. The placement secretaries also make frequent use of general information tests and trade or performance tests. The counsellor knows the hours, salary, opportunities for promotion, and the general working conditions for the different vacancies. All these data are utilized in trying to place the right person in the right job. After placement, the office follows the young person into the new position and seeks to guide him by interviews or personal visitation. The employers often give the counsellor information extremely helpful for further guidance.

This bureau has published several valuable booklets. Some of these are included in the recently published Bulletin of the Department.¹ The following titles indicate the contents of those in use: "Eight Reasons Why Employers Should Use Our Service;" "Your Part and Our Part in Placement;" "How to Introduce Yourself to an Employer;" "Hints and Helps for the Successful Worker;" and "Remember," a folder containing many pointed

¹Department of Vocational Guidance, Pittsburgh Public Schools.

suggestions for boys as to personal appearance, cleanliness, and poise.

There is a high-school counsellor in each high school. The teacher appointed to this position is relieved of a part of, or of all, recitation and home-room work. Some of the duties of the high-school counsellor may be understood from the following outline, sent by the superintendent of schools to principals and counsellors, as the minimum of work required in connection with the guidance program in the Pittsburgh high schools.

JUNIOR HIGH SCHOOL

A. Prospective Junior-High-School Pupils.

Group conferences with regularly scheduled classes in elementary schools for a discussion of the value of the high school.

B. Junior-High-School Pupils

VII-B. Group visitations by regularly scheduled classes of high-school departments in order to get acquainted with facilities of the high school, other than those with which the pupils come in contact.

Group conferences with regularly scheduled classes for the discussion of vocational aims and the filling out of blank form—Vocational Guidance I.

VII-A. Group conferences with regularly scheduled classes for explanation of courses open to VIII-B students and discussion of aims of the various courses.

Conferences with individual students for the determination of VIII-B schedules.

VIII-B. Group conferences with regularly scheduled classes for discussion of significance of subjects pursued in various courses. Conferences on blank form, Vocational Guidance I, for possible changes.

VIII-A. Group conferences with regularly scheduled classes for the discussion of the value in further education. Individual conferences on courses and electives for ninth-year programs.

IX-B. Group conferences with regularly scheduled classes for discussion of importance of vocational aims in planning a high-school program.

IX-A. As in senior-high-school program.

Each junior high school has a general shop offering six kinds of shop work to 7th-grade boys. Courses in the 8th grade are developed on a 'try-out' basis. The shop work in the technical course is organized on a 'rotation plan' to give try-out experience. One activity period each week is set aside for group and individual conference of the report teacher with her report class. Life career clubs for the study of occupations are formed for all pupils of the upper seventh grades and for the ninth-grade students who have not had IX-B Social Science

in which occupational study is covered. The eighth-grade students who do not expect to be in school for the ninth grade have a special club.

SENIOR HIGH SCHOOL

A. Prospective Senior-High-School Pupils

It shall be the duty of the counsellor to meet with all prospective incoming pupils twice before they enter high school. When possible, one of these meetings should be planned so that parents may be present when the different courses are explained.

It shall be the duty of the counsellor at this meeting:

- (1) To stress the need of training beyond the elementary school;
- (2) To explain what the Pittsburgh Public Schools have to offer beyond the elementary school;
- (3) To explain the courses offered in the high school and where they are intended to lead;
- (4) To explain how the home and school can co-operate for the best interests of the pupil;
- (5) To state requirements for place on honor roll or membership in Honor Society.

It shall also be the duty of the counsellor at one of these meetings to advise with all prospective pupils regarding their individual programs of studies.

B. Senior-High-School Pupils

IX-B. It shall be the duty of the counsellor to meet all IX-B pupils in regularly scheduled classes or groups during the early part of the semester. At this meeting, blank form, Vocational Guidance I, will be explained by the counsellor and filled out by the pupils. This meeting will offer opportunity for emphasizing the need of vocational information, for encouraging a study of the vocations, and for urging a thorough preparation of school tasks. The counsellor should also explain his function in the school.

IX-A. An inspirational and explanatory talk to all IX-A pupils in regularly scheduled groups or classes. At this meeting, the counsellor should undertake to explain (1) the kinds of credits required for graduation from each course offered in the high school; (2) the requirements for definite college courses and the necessity of the pupils making early application to the college; (3) the opportunity that comes to pupils who do high grade work throughout their entire high-school course to participate, upon graduation, in the award of scholarships offered by many colleges; and (4) the requirements for entering vocational life on leaving the high school.

This conference should prepare pupils to fill out blank form, Vocational Guidance 14, at a meeting to be arranged by the counsellor later in the semester. This meeting may well be held with the respective report groups.

The attention of IX-A pupils should be called to the vocational possibilities of Pittsburgh and the work of the Public School Employment Offices.

X-B. The counsellor shall meet X-B pupils in regularly scheduled groups when special emphasis shall be laid on Pittsburgh industrial life and the kind of opportunities offered young people trained and untrained.

X-A. The counsellor shall meet all X-A pupils in regularly scheduled classes or groups where he shall undertake to convince the pupils of the value of the last two years of high-school work to them. The opportunities of other educational media than the high schools should be explained to them, but only by way of comparison as to opportunities offered. These other schools should include the public evening high schools, correspondence schools, private business schools, and other special schools of similar character.

XI-B. The counsellor should meet with all XI-B pupils in class or other special groups in order that a review may be made of the best use of electives. This should be done during the first two weeks of the semester, so that any necessary schedule changes may be made.

XI-A. There should be individual conferences with all XI-A pupils during this semester. Such conferences should make certain that every pupil's program is complete to date and that there is a proper understanding of what is to be accomplished during the senior year, both as to immediate vocational aims and college entrance requirements.

XII-B. A short talk to groups or special classes, setting forth the purposes of the local placement offices, should be given.

XII-A. The counsellor should meet all pupils of this group personally who may need his services in arranging for college entrance or for any other purpose. He should also arrange a meeting at which representatives of the placement offices may be given an opportunity to explain what can be done for those not going to college.

Since the vocational guidance has been developed so recently, most of the workers in this field have not been specially trained. Teachers of broad education and sympathy, however, soon develop into excellent specialists. This development is aided greatly by departmental meetings for the discussion of common problems. The success of the Department of Vocational Guidance in Pittsburgh is due, in no small measure, to these departmental meetings.

CHAPTER IV

GUIDANCE ACTIVITIES IN SMALL CITY SYSTEMS

A. INTRODUCTION¹

The study of occupations in the junior and senior high schools is rapidly being recognized as a vital subject. This is true whether it forms the first step in a systematized scheme of vocational guidance, or is given as an entity in itself. One indication of the growing interest in this subject is the fact that the United States Bureau of Education recognized it to the extent that last winter it devoted one of its conferences to a discussion of this one subject. This was at Detroit in connection with the combined meeting of the vocational education and guidance associations.²

Among those who are working in the vocational guidance movement there is a feeling quite generally, that before there can be guidance there must be a background of occupational information on which to build the guidance program. Some make no special effort in this direction until the young people arrive at the placement office. However, some work in the study of occupations must be done even then.

In the nature of large city public school systems it is easier to get work of this type or similar types started than there is in small systems. It is usually possible to get funds to provide whole or part-time investigators, directors, and instructors. Detroit, Providence, Cleveland, Boston, Chicago, Pittsburgh, and Philadelphia are notable examples of cities that have organized fairly extensive and complete vocational guidance programs. It would be more correct to say vocational and educational (or curriculum) guidance, for in many places it is the latter kind of guidance that is first needed.

¹This introduction has been adapted from the introductory statements of the Saint Cloud report, prepared by John F. Friese.—L. A. HEER.

²Department of the Interior, Bureau of Education, Circular No. 16, March, 1923, contains a complete report of this meeting, prepared by Dr. William T. Bawden.

With the study of occupations a recognized part of the large city curriculum, what can be said for this study in the curriculum of smaller cities? Can regularly organized programs in it be organized in a small city system? If so, what occupations should be selected? Who shall organize and conduct the studies? When and how shall they be given? Where and how may general and local material for studies be obtained? These questions and many others will immediately present themselves to anyone interested in starting the work in smaller localities.

SPECIAL PROBLEMS OF SMALL CITIES

Conditions existing in most small cities give rise to special problems. In some states more pupils enter the high schools and graduate from them than in other states. It is also true that in some sections of the country a greater proportion of the pupils complete the high-school work in small than in large cities. In such places the study of occupations may well be placed in the senior high school rather than in the junior high school, as in the great centers. The character of the occupations studied might also vary considerably because the pupils will naturally seek and strive for a high occupational level. There are fewer juvenile jobs in small cities, and likewise fewer opportunities for first-hand observation or experience. Large numbers of occupations may not be represented locally. These must be brought to the pupils in an impartial manner by one who has had contact or experience outside the local community, or, by one who has made thorough studies of them.

COMMON METHODS

The organized study of occupations has been conducted through a number of accepted media. These include: regularly organized occupations classes with school credit, English classes, and social science classes. The chief weakness of all three lies in the fact that one person, frequently academically trained only, conducts the study of a large variety of occupations with which he has had no personal contact or experience. An additional weakness in the two latter methods is that the study of occupations is not the one and chief aim of the class.

Other methods sometimes used are: group and personal conferences, placement work, visits to industries, part-time employment and socialized manual arts, and assembly talks by people outside the school. Assembly talks have two decided drawbacks. It is difficult to get laymen to present their occupations in an unbiased way, and to tell both the good and the bad points about them. Also, unless the occupation is investigated according to some plan, important phases will be omitted.

PHASES OF VOCATIONAL AND EDUCATIONAL GUIDANCE

A complete program of vocational and educational guidance can readily be divided into five parts: (1) occupational information (occupations-study) to serve as a foundation on which to build later work; (2) guidance, usually an individual conference with a pupil to help him analyze himself and the proposed job or specialized education. (Tests, school records of various kinds, home investigations, etc., may all be taken into consideration in this conference); (3) training and education for a definite occupation or specialized education (considering secondary-school pupils); (4) placement of pupils in proper occupation or specialized curricula; (5) supervised progress on the job for those who go immediately into an occupation. Such a program seems possible for all high schools.

The local conditions and the composition of each high-school faculty will of necessity influence the character of the occupations-studies prepared and presented. However, in nearly all high schools one will find at least one teacher in charge of each of the special departments—agricultural, commercial, and industrial. These, with a science teacher and one or two academic teachers, are sufficient for organizing the work and taking up the study of the occupations which seem to be most vital to the children of the particular community. When occupations-study is organized on this plan, someone who has given the subject reasonable study must act as a co-ordinator in the organization and preparation of the work. All the informal talks should be typewritten, so they may become the property of the school. This is especially desirable of peculiar local occupations and of local data pertaining to all occupations.

In communities where students leave in large numbers at the end of the junior-high-school period these same purposes, modified in detail, could well be carried out in a similar manner. Both general and local occupations should always be presented in order that students may get a broad conception of all fields of human endeavor. The existence of important local occupations will change the list of occupations studied.

SOURCES OF MATERIAL

Very excellent and trustworthy material on occupations, nation-wide in its scope, can be secured from a number of sources, as: (1) United States government departments and bureaus, such as Commerce, Labor, Education, Census, and Junior Employment Service; (2) vocational guidance departments of public school systems; (3) university and philanthropic vocational bureaus; (4) specially prepared occupations-study books, some covering one occupation and some a considerable number of occupations; (5) industrial and personnel surveys of cities; (6) local chambers of commerce and commercial clubs.

B. EDUCATIONAL AND VOCATIONAL GUIDANCE IN THE PUBLIC SCHOOLS OF GARY, INDIANA

ALBERT FERTSCH
Director of Guidance and Placement, Gary, Indiana

In Gary the complete educational program is one of guidance. The question sometimes arises as to what part in this guidance program academic training, special activities, and vocational training should play. Again, how can the evening school, Saturday, Sunday, and summer schools function in this program of guidance? The question also arises as to what part of the program is educational guidance and what part is vocational guidance. If Latin and higher mathematics are essential for a person to become a physician or a construction engineer, these traditional high-school subjects become important factors in the program of guidance, whether called educational or vocational.

SUPERVISION, GUIDANCE, AND PLACEMENT

The guidance program is based on the belief that in any school community there is an endless variety of individuals to be served and an endless variety of community services to be rendered by the citizens of the community.

In Training

In the guidance, supervision, and placement in training, Gary has varied activities for its pupils. Freedom in the selection of courses is granted, but a sufficiently strong organization keeps this freedom from becoming license to enter any activity at any time individual desires may prompt.

Above the elementary grades are the following school divisions: Senior High School, Technical High School, Vocational Trade School, Commercial High School, Junior Technical School, Junior Vocational School and Special Trade Classes with the possibility of special adjustment for individual pupils.

Each division of the school is intended to serve those for whom such school is a satisfactory exit into life. An adequate preparation

is alike afforded to those who wish to enter a university and to those who wish to enter business or industry. In addition, a practical course is provided for those who do not enter the high school, but who through necessity or choice go to work as soon as they have reached the legal age.

To meet the problems arising and to accomplish effectively this varied program, co-operation of all the school agencies is essential. The psychological and educational testing division is kept busy making test results available for teachers, supervisors, principals, and the several departments of the school. The counselors keep in close touch with the pupils in their progress in school work. Adjustments of programs are made whenever it is felt that this will better meet the needs of pupils.

In Employment

In placement, supervision, and adjustment in employment Gary co-operates with the Junior Division of the United States Employment Service and the State Vocational Office. In its program the school recognizes that work in a plant or an office may be made an educational and training process of more value to some than attendance at school.

To avoid haphazard choice of employment with consequent worry, waste of time and human resources, the school may well provide an effective organization for employment service. This resolves itself into a co-operative program of home, school, and community enterprise.

The employment service is a part of the guidance program. Its effectiveness is not dependent upon the number of juniors it places in jobs, but upon the manner of its service to the juniors whereby they are kept on the alert to take advantage of opportunities offered for further growth. Each community must go back to the original sources of its population for the background of ideas in its placement program, and then organize activities to further serve the juniors who find it necessary to enter upon employment.

Gary has a general continuation school and an adult day school. In addition, the evening school offers every variety of work to those who wish a service varying from elementary to university extension

courses in the academic, vocation, and physical training departments.

CO-OPERATIVE PROGRAM

To secure an effective program of placement and supervision, a co-operative program is essential. The problem of connecting students in the public schools, secondary institutions, and colleges directly with the industrial and commercial activities of the community is only a problem of "providing an opportunity." The beginning must be made from the point of view of the junior if the fullest measure of service is to be assured.

Co-operation of the School

Teachers realize that a number of juniors go to school just because it is the fashion. These students do not want to work, but their parents, wishing to give them the best educational advantages, let them continue in school when it would be to the best interest of the children to put them to work. The school encourages co-operative programs of school and work for a large number of such juniors. Such a program would show juniors how work and education are correlated rather than separated.

Another group of juniors for whom the school provides a co-operative program is that large number who can not economically afford to go to school under the usual conditions. The co-operative program furnishes them an opportunity to contribute to their own support and a chance to continue their education in trades or high schools or colleges.

Co-operation of Industry and Business

There are two practical methods on the part of industry and business in accomplishing a co-operative program with the schools: (1) the alternation during the year of a given number of hours of school instruction with actual employment experience in business and industry; (2) opportunities to grammar-school, high-school, and college students for temporary work during vacation periods, with the aim of later making the employment permanent.

Various arrangements are possible. One plan practiced is that juniors alternate weekly between shop and school. Business and industry take the boys in pairs, so that alternating days they have one of the pair at work while the other is in school. Each Saturday morning the boy who has been at school that week goes to the shop to familiarize himself with the work he is to take up Monday morning. Both methods are now practiced in Gary.

C. EDUCATIONAL AND VOCATIONAL GUIDANCE IN THE PUBLIC SCHOOLS OF JACKSON, MICHIGAN

CHARLES A. WARDNER

Director of Vocational and Educational Guidance, Jackson, Michigan

In September, 1920, the Department of Educational and Vocational Guidance was established in Jackson under the supervision of a Director of Vocational Education. The plan of work as undertaken aimed to supplement the daily school program by helping to adjust the school to the child and to aid the home in giving wise counsel and advice to the child at a critical time in his life and to keep him in touch with the practical side of life and responsive to the interest inherent in everyday things.

Proper guidance is sorely needed at the beginning of the adolescent period. This is the period when the child's whole future life may be either made or marred according to the ideas he gets of his relationship and duties to society and the state. Here lies the great opportunity to allay the rising tide of social instability and unrest by giving the child a clearer conception of the world outside the school-room and by helping him to acquire a real desire for advancement instead of a blind and sullen resentment against the compulsory education law. Often children develop toward authority an antagonistic and disloyal attitude, fostered by ignorance and lack of proper advice. This may sometimes be changed entirely by getting the child to select, even temporarily, a future vocation. He will then have a new interest in his studies and will derive greater and more lasting benefit from them. With this idea in view we have placed in each of our two Intermediate Schools a vocational counsellor who, through individual and group counselling, is reaching every child who passes through the school. The counsellors have justified their positions through the elimination of failures by individual counselling and by adjusting programs.

The counsellors teach classes in occupations. All 8-B students are required to take this work two periods a week for one semester. In this way each child gets a general idea of all of the occupations common in this city and more intensively studies a selected group of occupations with a view to selecting one or more as a possible

future vocation. The capacities and training required in each vocation, also the opportunity for advancement, the standards of living of the workers, and the hazards in each are carefully laid before the pupils. Various other questions which will aid the pupils in forming a basis of thought to aid in the selection of a life work are brought up for discussion. The class in occupations follows the outline given in a textbook, but depends quite largely for its material upon information gathered first-hand through trips of inspection to local industries and upon material gathered by the industrial information class.

The industrial information class is composed of a group of teachers, principals, and supervisors who are studying industries under a plan approved by the Michigan State Department of Public Instruction. Each member of the class on completing the course receives State credit for the work towards a vocational certificate. This class meets every Tuesday afternoon from 4:15 to 5:30 and studies certain occupations by the classroom method, often supplemented by lectures given by some individual engaged in a given occupation. Certain other occupations are studied by trips of inspection to local plants and factories. These trips are made every other Saturday from 8:00 to 10:30 A.M. Usually the shop superintendent or some other official conducts the party through the plant and explains details. Each member of the class selects an occupation upon which to write a theme. This material is later mimeographed and is then used by the classes in occupations.

Educational guidance is a continuous process and requires for its success the hearty co-operation and wise counselling of both the home and the school.

A self-analysis blank is given each child soon after entering the intermediate school. This blank, together with a letter of explanation, is taken home to parents. This letter urges the parents to assist the child in filling out the blank. The self-analysis questionnaire is then returned to the school and kept in the home-room in a file as long as the student remains there; it then passes to the next home-room with the student. Each semester it is brought up to date, so that it provides a cumulative record of the child's

progress and achievement as well as a record of the child's personality, aptitudes, and special abilities.

The students in the intermediate schools are given the opportunity to select from a wide range of elective studies. Many of these studies are what we call "trade-sampling," or "trade try-out" courses. The home-room teacher, assisted by the counsellor, helps each student to select these elective subjects wisely with a view to their importance in helping him prepare for his probable future vocation. If a child has properly selected his electives and has had proper advice and counselling, by the time he finishes the intermediate school he not only should have a strong desire to complete the high school, but he should also know somewhat definitely what group of occupations his future vocation will probably be in.

The Bureau of Guidance and Placement under the United States Department of Labor, Junior Division, was established in Jackson in February, 1921, and is now doing an excellent piece of work in placing young people in desirable positions. The record of each applicant is carefully looked up and also the prospective place of employment is investigated. After a child is placed in employment, he is 'followed up' to see that he is making good, and if not, the reasons therefor are investigated and adjustments made. In many cases probable failure is turned into success and the young person, instead of losing his employment, is helped to improve himself to such an extent that he receives promotion with increased pay. All young people under twenty-one are urged to make use of this Bureau, which is free to the employee and the employer. Young people are registered, whether they are attending school or have left school some two or three years ago. All employment has educational value to a greater or lesser extent, and in many cases the young person, through contact with industry, has been led to see that he needs more education in order to succeed. Quite a percentage of the young people leaving school to enter industry go back to the all-day school.

The compulsory attendance law requires that all children who have not reached seventeen and who have not completed the tenth grade must attend school eight hours a week. This results in

keeping a large number of young people in all-day school who would otherwise drop out and go to work. The part-time school, through co-operation with the department of guidance and placement, is helping many young people to adjust themselves and to prevent the tragedy of becoming industrial misfits. A large number of the part-time school students go back into the regular all-day school. There is a provision in the James Law which enables the school to give credit of four hours of the required eight hours for actual training in employment such as an apprenticeship course would give. This provision is being taken advantage of, and through co-operation with the Employers Association a machinist apprenticeship system has been organized. Boys are placed in a class by themselves and are given English, shop mathematics, mechanical drawing, and machine shop practice, one forenoon each week. Contracts are made with the apprentices which assure them of proper and thorough training in the machine shop. This will result in making all-round machinists and toolmakers. It has the advantage of giving them actual machine shop training in the factory under factory conditions. The boys are paid a liberal rate for their time, which includes the time spent in school.

The department of educational guidance is woven like a fabric throughout the whole school system. Many of the academic departments are lending valuable aid, for example, the English department, in which vocational subjects are used as themes for English composition. The teachers of each academic subject point out to their students the value of their subject in preparing for various occupations. In this way many students have been interested in choosing a group of occupations for future study. They may then desire to talk with older persons engaged in occupation. For instance, a boy expresses a desire to become a physician, then his teacher may arrange for him to meet a physician and talk the subject over. An appointment is made for a conference. Often this has resulted in a business or professional man taking a personal interest in some particular boy.

Work permits are issued by the supervisor of attendance, whose office is in connection with the department of vocational education and guidance. All placements are made through the Junior Place-

ment Bureau, which is also connected with the department of vocational education and guidance. All of these agencies co-operate and are closely co-ordinated in one department. Valuable assistance is also given by the Department of Measurements, which has charge of the administration of intelligence and educational tests in the schools. The card records of this department are accessible to the Department of Educational and Vocational Guidance.

Valuable assistance is being given by the local clubs which take great interest in students needing advice and outside influence. The members write letters to students who are completing the intermediate school, urging them to continue through the high school. They write personal letters to each student who fails to enter the high school or who drops out before completing his course. They entertain as dinner guests each graduating class and give advice and assistance to those desiring to go through college. A scholarship fund has been created to assist worthy students to obtain higher education, and in many ways most valuable assistance has been given to the department of educational guidance.

The outstanding steps of advancement achieved during the two years in which the department of vocational and educational guidance has been in operation at Jackson may be summed up as follows: (1) The part-time school and the Junior Placement Bureau have become firmly established. (2) Vocational counsellors and the classes in occupations have been inaugurated in the intermediate schools. (3) The industrial information class has been made a permanent institution. (4) Manual training and mechanical drawing courses have been revised and brought up to date. (5) Household mechanics and sheet metal work have been introduced. (6) A local Home Economics Association has been formed which is building up courses based upon local conditions. (7) A machinist apprenticeship system is being established in connection with the part-time school.

D. EDUCATIONAL AND VOCATIONAL GUIDANCE IN THE PUBLIC
SCHOOLS OF LINCOLN, NEBRASKA

HARRIET E. TOWNE
Director of Vocational Guidance, Lincoln, Nebraska

In Lincoln, the Department of Vocational and Educational Guidance is centered in a Child Welfare Department, which includes Census, Attendance, Home and Student Adjustments, Employment Certification and Follow-Up, and Vocational, Educational and Social Guidance. The work is handled by a director in charge of the department, an attendance assistant, a visiting teacher, two office assistants, an enumerator in each grade building, and from one to four vocational reading teachers in each building who are also counsellors in the broadest sense of the term. This work is greatly augmented by virtue of the active support and co-operation of the Chamber of Commerce, a Scholarship Committee, and various social and contributing agencies.

I. PURPOSE

Throughout the seventh, eighth, and ninth grades any phase of school procedure should have as one of its main goals vocational, educational, and civic guidance of the pupils. This is a period of marked change in the lives of students; they are forming opinions of what they would like to do, changing their minds frequently, and really beginning to think along the lines of vocations and citizenship.

Vocational Reading is introduced throughout these grades, so that at least for one or two periods a week children are given an opportunity, with help, to learn about vocations and the choosing of them, about life, its work and responsibility, and how best to prepare for it.

Tersely stated, the purposes of this vocational reading are: (1) to acquaint the child with what the world offers to him in the way of opportunities (occupations; nature of, conditions in); (2) to show him how to fit himself for the world's work (preparation, education, character building); (3) to teach him to evaluate himself and his opportunities; (4) to teach him that success is dependent upon character, upon suitable education and preparation

for life work, upon adjustments of his own abilities to the requirements of the field he is to enter, and upon right choices; (5) to teach him that service and contentment are as real to his success as remuneration and advancement.

II. CONTENT OF COURSE

Vocational Reading Courses (Twice a Week)

VII-B Group

Classroom. Biography: to lead pupils to appreciate strong points of these who have lived through the ages, to lead them to realize that success has been due to strong points in their character, to help them to discover that, in our own lives, there is always a significant relation between character and success; to show them that service to the city, state or nation is the basis of recognition; and that each has made some type of contribution which has made him live.

VII-A Group

Classroom. The Value of an Education: to show how an education functions in success, happiness of the individual, and service; to acquaint students with the sources of education and the type and degree necessary to success in various vocations and professions; to teach the necessity of adequate preparation for any phase of life work.

VIII-B Group

Classroom. The Elements of Character That Make For Success: to help students to realize that success is relative; to help students to realize that certain qualities bring certain results; to help students to realize that success is the result of an attitude of mind coupled with energy; to help students to desire to possess certain qualities for the power it will give them, personally, and for the ability it will give them to serve the community and all society.

VIII-A Group

Classroom. The Choice of a Vocation: to give the child the experience of making a choice and evaluating his own abilities and the

requirements of the vocation he chooses; to help him to appreciate what further preparation is necessary; to motivate his future education.

III. METHOD

A. Classroom

1. Teachers of Vocational Reading Classes.
 - a. Selection of teachers personally and professionally adapted to this phase of school work.
 - b. Motivation-Slogan: "Sincerity of Approach." Practice: Devices to make course as practical and real as possible.
 - c. Teachers act as counsellors—vocational, educational, and social.
2. Students.
 - a. Personal investigations on part of students. Few texts are used, many sources, abundance of current material, students encouraged to cultivate the spirit of first-hand investigations.
 - b. Reports and discussions by students.
 - c. Occasional talks in classroom by business and professional men and women.

B. Visits to Industries

1. Furnish first-hand information concerning business and industry (undertaken jointly by schools and Chamber of Commerce).
2. Correlated with classroom subjects, as VII-B, Retail Trade Group, correlated with commercial geography; VII-A, Banking, Insurance, and Investment Group, correlated with arithmetic; VIII-B, City Planning Group, correlated with history; VIII-A, Industrial Promotion Group, correlated with industrial geography, etc.
3. Preparation for trips. Study in classroom of questions relative to various places to be visited. Trips correlated with certain subjects in course of study (classroom correlation). Questions prepared jointly by business and professional men and Child Welfare Bureau.

4. Visits.

a. Talk on general topic related to the trip, by a business or professional man, to entire group of 400 or 500 students, meeting by grade at central point.

b. Divided into 20 or more groups for visits to business houses or to industries. Business men furnish the laboratories and act as guides and informants.

5. Reports by each student before classroom groups. Students act as reporters, and carry back full accounts of visitation to other members of their group.

6. Industrial conference, at Chamber of Commerce. Follows closely upon visits. Presided over by two competent business or professional men. Representatives bring to conference questions that have arisen out of their trips and study for discussion and elucidation by leaders. Acts as 'clearance' for the study and trips for the semester.

C. "Civic League"—Organization of Junior High-School Students

1. Under auspices of schools and Chamber of Commerce.

2. Students as "Junior Citizens." These students are practicing citizenship in their own group—care of building and grounds, character building, school, home, and community activities.

3. Efficiency Certificates. Granted by schools and Chamber of Commerce. For character and certain degree of scholarship.

D. Counselling and Advising

1. Curriculum

2. Preparation for "life work"

3. Helping them to *shape character*

4. Helping them to *evaluate self* in terms of service, citizenship, vocations

5. Moral, social guidance

6. Employment guidance

E. Attendance Department and Work of Visiting Teachers

1. Counselling

2. Advising

3. Home and school adjustments

E. EDUCATIONAL AND VOCATIONAL GUIDANCE IN THE TECHNICAL HIGH SCHOOL, ST. CLOUD, MINNESOTA

JOHN F. FRIESE

Manual Arts Department, Public Schools, St. Cloud, Minnesota

This report of work accomplished presents some of the experiences and conclusions after more than two years of trial at the Technical High School, St. Cloud, Minnesota. This is a school of 700 pupils and 35 teachers in a city of about 17,000 population. It is an agricultural, manufacturing, and railroad center, the like of which exists in many parts of the United States. Occupations-study is here considered as a required extra-curricular study. It is required for graduation in addition to the usual units of high-school work.

There are several methods of providing occupational study. First, in all of the manual arts work the giving of occupational information is made one of the four principal objectives of that work. Information about the principal trades and allied trades represented in our school shops, such as working conditions, salaries and wages, preparation, health of workers, products, etc., is definitely planned for at various points in each of the various shop courses. In addition, instructors are ever on the alert for opportunities to present such information as special situations arise, especially in exploratory courses.

The second method of giving this study is to have various high-school teachers prepare from one to four informal talks each, about the same number of occupations. These talks are followed by questions and discussions and frequently by individual conferences. The teachers are selected because of their experience with, or special relation to, each occupation; something more definite and connected than a mere academic study of the occupation is thus secured.

In the local school twenty-two instructors, twelve men and ten women, last year gave forty-eight talks about that number of occupations. All freshmen and sophomore students are required to attend eighteen talks during those years, the idea being to direct their thoughts toward a great variety of occupations both general and local. Seniors are required to attend twelve talks, and their se-

lection should indicate, in some instances at least, a trend toward one of the six or seven principal divisions of occupations. Senior talks are modified to the extent that only those occupations or divisions of occupations are considered which high-school graduates generally select.

OCCUPATIONS STUDIED

In order to give the students a comprehensive view of all fields of human endeavor, both local and general occupations are studied. The list selected for study in St. Cloud follows (some are for boys alone; some for girls alone; some for both): Accounting, banking, bookkeeping, building trades, business administration, college entrance, commercial art, costume designing, dairying and livestock, dentistry, dressmaking (commercial), electrical work, engineering, farming (general), foods work, garage work and automobile selling, granite cutting, government service (all public), homemaking, home-making and commercial occupation both, industrial chemistry, institutional management, interior decoration, journalism, laboratory work for women, law, library work, manufacturing (production), marketing (farm), mechanical and architectural drafting, medicine, metal trades, millinery, milling, nursing and dietetics, pharmacy, printing and engraving, salesmanship (general-retail), secretarial work, social-civic work, statistical work for women, stenography, store service, teaching, tea room management, trade schools, transportation (railroad).

Material on local occupations has been secured in four ways: (1) through the gathering of special data at the time of the school census; (2) through the United States census special reports; (3) through questionnaires filled in by wage-earners of families represented in the schools; (4) through personal investigations by the instructors.

ORGANIZATION OF MATERIAL

All the material, general and local, has been so organized that various important phases of a large number of occupations will be considered. In the case of the questionnaires referred to above, all

of those for each separate occupation were studied and a consolidated sheet made out from all the replies.

The various phases of each occupation which are stressed are: (1) a general description of tools, work, etc.; (2) the workers—their number, how recruited, how trained, organized, turnover, etc.; (3) requirements—physical, educational, and mental; (4) working conditions, as hours, health, liability to accident, etc.; (5) wages, salaries and returns, and length of training period; (6) specific vocational advice as to best schools to attend, apprenticeships, costs of special educational training courses, proper local people from whom to ask advice, school advisors, and the application for, and successful holding of, positions.

SCHEDULES

The following program has been found to work out very satisfactorily in our organization. The forty-five minute talks given to the lower classes are given three times each during the first semester. They are placed during the day when the largest interested groups can attend, and also once in the after-school help period. Sometimes entire classes, if especially interested, are excused from their regular work to attend a talk. Teachers must sometimes be relieved of a class in order to meet the groups assembled in some room for this study.

Senior talks are shortened to not more than thirty minutes. Each is given once during the second semester. The twenty-minute home-room period with ten minutes in addition before school, and the after-school help period are used for this purpose.

In the St. Cloud organization occupational study supplies the background for further advisement in the form of individual conferences which are at present required of all seniors before graduation. Our plans, when more time for the chief vocational advisor is available, are to have personal conferences with all students early in the first semester of each year. This is started in a small way now in the home-room period of twenty minutes before classes begin in the morning.

All freshmen students fill in a personal card which indicates their ambitions, best-liked studies, etc. Parents also fill in a section giving their hopes and plans for the future of their children. There is also a place for the chief counsellor to fill in with any notes about school records, tests, etc. These cards follow the pupil through the school, and are used at the time of senior conferences. The chief counsellor and individual students together select the occupational study teacher, and frequently outsiders also, with whom they have the conferences.

If we but broadened the pupils' occupational background and directed their thoughts toward their future occupations, we would feel repaid for our efforts. We know that in addition it is also an extremely practical social and economic science study, since this group is regarded by many educators as one of the three or four principal high-school groups of studies.

In conclusion the four main ideas constantly kept in mind may be summarized as follows:

1. The information given must leave with the pupils all of the truth in an unbiased manner. Otherwise we are open to deservedly severe criticism.
2. Studies must be made as interesting to young minds as possible. All studies and their teachers will not always be interesting the first time the work is undertaken. It is often possible as the studies are given again and again to find devices and to develop the material in an interesting manner.
3. The information given and brought out, to be of greatest value, must be used definitely in some way either through educational or vocational advisement or both, before the pupil leaves school.
4. As the most vital result of any advisement program these studies should help teach the boys and girls methods of helping themselves to weigh, study, and analyze their aptitudes and the occupations in which such aptitudes would successfully and happily function, and to use reasonable methods of determining what education or training is necessary.

In checking the members of two graduating classes numbering nearly 250 we have found large numbers in occupations or in

schools about which they were given occupational information and in which they were advised and directed, though always with the final choice left solely to them. Deducting some for errors in directing thought into the wrong channels, there has been a sufficiently large number of cases where we can see and approve the results of our work to warrant a continuation of the plan.

CHAPTER V

A PUBLIC SCHOOL PROGRAM FOR COLLECTING AND USING OCCUPATIONAL INFORMATION

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NEED FOR RELIABLE INFORMATION

Much of the criticism of the vocational guidance movement in this country may be attributed to the increasing objection to having early decisions forced upon young persons by the larger experience of adults. Despite the recognized need for providing adequate counsel and guidance to assist individuals in intelligently choosing both educational opportunities and life occupations, constructive criticism continues to be directed toward those practices which force unreliable information and unwarranted decisions upon either children or adults. Present-day complexities resulting from the many changes in our social and economic development, demand that public school pupils no longer be required to base such important decisions and adjustments upon mere opinion or meager data.

In keeping with this belief, an increasing number of school systems are attempting to furnish all pupils with accurate knowledge concerning the relative opportunities and requirements in the social, economic, and larger personal aspects of the various life callings. Whether or not these schools succeed fully, is a matter of relative values. On the other hand, it is only too obvious that in case they should fail completely in their obligation to keep pupils from choosing blindly by presenting all of the related facts and helping to interpret these in terms of existing conditions and tendencies, sooner or later most pupils are destined to make educational plans

and occupational selections either with or without adequate factual guidance. Consequently, it is the opportunity as well as the responsibility of school counsellors and teachers for each level of learning to inspire the pupils and to present them with reliable information in order to broaden their occupational horizon in keeping with the spirit of each subject of instruction and the whole school organization of which the counsel and guidance activities are an integral part.

COLLECTING AND INTERPRETING OCCUPATIONAL INFORMATION

It is inevitable that the ultimate success of any school counselling program depends, to a large extent, upon adequate and continuous provisions being made for collecting, evaluating, and imparting useful data resulting from local and outside studies of important occupations. These occupational surveys which have been conducted in Detroit during the past two years have resulted from a policy of the Board of Education to supplement the training and experience of all school counsellors and teachers who were assigned the specific responsibilities for assisting pupils either in choosing possible educational advantages or in acquiring suitable occupational knowledge, or in both.

A decision of the Board of Education and the University of Michigan to co-operate in providing adequate training facilities for school counselling made it possible to obtain the services of over one hundred advanced students—teachers, counsellors, or supervisors connected with the public schools—in securing and checking the desired results within a comparatively short period. Then, too, it was discovered beyond a doubt, that actual participation in these business-like contacts which necessarily involved a scientific attitude toward problems of investigation and analysis in selected occupations, as well as the subsequent interpretation of these data in the light of school needs, furnished the different counsellors and prospective counsellors with valuable insight into present-day methods, conditions, and relationships in the various divisions of occupational work.

As a result, a large number of the principal industrial, commercial, and professional occupations in the city have been sur-

veyed to secure information about the work, the main advantages and disadvantages, the qualifications and training, the possibilities and requirements, the remuneration, and the like (see Table I).

TABLE I. TYPES OF INFORMATION USED AS A BASIS FOR OCCUPATIONAL COUNSELLING IN DETROIT PUBLIC SCHOOLS

1. *Nature of work*
2. *Main advantages and disadvantages*
 - (a) Factors that cause physical or nervous strain
 - (b) Factors that interest and develop the worker
 - (c) Factors that restrict mental growth
 - (d) Factors that are in other respects important as affecting the welfare of the workers (*i.e.*, liability to accident, occupational diseases)
3. *Qualifications and training needed*
 - (a) General education
 - (b) Necessary technical education
 - (c) Manipulative skill
 - (d) Other requirements; qualities essential such as accuracy, etc.
4. *Possibilities in requirements of occupation*
 - (a) Provisions made for systematic instruction of workers
 - (b) Necessary or technical knowledge
 - (c) Manipulative skill
 - (d) Extent to which occupation can be learned "on the job"
 - (e) Line of promotion
5. *Remuneration*
 - (a) Wages
 - (b) Special
6. *Hours of work*
7. *Seasonal demands in work*
 - (a) Busy season
 - (b) Slack season
 - (c) Fluctuation in employment
8. *Are workers organized?*
9. *Entrance age*
10. *Time required to learn duties*
11. *Is supply of labor adequate to meet demand?*
12. *Is demand for labor increasing or decreasing?*
13. *What is the source of supply?*
14. *Common deficiencies of workers*

The various occupational investigations and analyses have been made by those who were seeking training either for full-time or part-time school counselling or for similar advisement work, and were developed in each case with little or no additional expense to the board of education by persons possessing some previous experience or familiarity with the particular occupations in ques-

tion. Throughout this co-operative program of collection and dissemination of vocational information the investigators have taken advantage of all similar surveys and studies that have been conducted in other cities and states. In fact, the divisions of field work were undertaken only after careful investigation of each available source of factual material related to the problem at hand.

The results of these completed occupational investigations and analyses have been evaluated and arranged in the particular form shown in Charts I and II, in order that adequate facts pertaining to the possibilities and demands in the different vocations of which these selections are typical examples, may be made easily available for constant school use. It will be observed that these composite statements selected from the surveys of department stores, printing trades, clerical positions, candy making, nursing, industrial chemistry, toolmaking, and carpentry trades, have been organized and published in the form of source-bulletins, because of the urgent need for having these helpful data as ready reference. Several of the persons who were directly concerned in developing adequate programs of systematic educational direction and vocational guidance for their respective intermediate or junior high schools, high schools, continuation schools, and special classes, have offered many valued suggestions both in preparing and using the various types of information that have been collected for their different purposes.

The divisions of information resulting from each survey referred to in these charts and reported in complete units in the bulletins on "Opportunities and Requirements in Local Occupations,"¹ have been carefully selected and checked by those school counsellors, house principals, and teachers whose names appear in connection with the findings for each of the occupational studies, with such

¹This series of bulletins on "Opportunities and Requirements in Local Occupations" is available in three parts at present: Part I includes department stores, chain grocery stores, commercial art, drafting rooms, toolmaking in large production plants, sheet metal trades, industrial chemistry, power machine operators in textile industry, special salesmanship (automobiles, bonds, stocks, insurance); Part II includes carpentry trades, printing and publishing trades, nursing, social service, stationary engineering, structural engineering, candy making, cigar making; Part III includes clerical positions, telephone operation, baking industries, wholesale drug industries, auto mechanics, selected building trades, laundry work, photography, dentistry.

assistance as was needed from the central supervisory offices. Tables II, III, IV, and V show the contents of the units or sections dealing with department store occupations, printing trades, clerical positions in manufacturing plants and commercial establishments, and occupations in nursing, respectively. Much indebtedness is due the many representatives of the industrial, commercial, and professional establishments in Detroit who have so generously aided the public schools in collecting these helpful sources of reliable information by their generous co-operation with the writer and the several members of his vocational counselling classes, which were conducted by the Vocational Education Department of the School of Education, University of Michigan, during the past two years.

TABLE II. DEPARTMENT STORE OCCUPATIONS

TABLE OF CONTENTS

(Part I)

Occupation	Pages
Wrapper-Inspector	6, 7
Cashier-Inspector	6, 7
Stock Boy or Girl.	8, 9
Marker	8, 9
Messenger Boy	10, 11
Wagon Boy or Jumper	10, 11
Helper	12, 13
Driver or Chauffeur.	12, 13
Shipping Clerk	14, 15
Aisle or Booth Girl.	14, 15
Salesperson	16, 17
Head of Stock.	16, 17
Buyer	18, 19
Floor Manager	20, 21
Manager, Superintendent	20, 21

TABLE III. PRINTING TRADES

TABLE OF CONTENTS

(Part II)

Occupation	Pages
Compositor	12, 13
Make-up Man, Stone Man.	12, 13
Machine Composition	14, 15
Proofreader (Copyholder)	14, 15
Pressman	16, 17
Pressfeeder	18, 19
Stereotyper	18, 19
Electrotypewriter	20, 21
Photo-Engraving Operator	22, 23
Etcher	24, 25

CHART I. SHOWING COMPOSITE ANALYSES OF SEVERAL SELECTED DIVISIONS
DISADVANTAGES, QUALIFICATIONS

Type of Occupational Information	Department Stores ¹ Salesperson	Printing Trades ² Compositor	Clerical Positions ³ Office Machine Operators
Nature of Work Occupational analysis	Salesperson is a representative of the firm to the customer and largely de-hands; sets composing stick to machines, adding matter to determine the success or failure of the measure, picks up type from case, chimes, bookkeeping machine by determining merchandise justifies and spaces it in stick, and chimes, mimeograph, turnover, service, and the reputation transfers each stickful to galley. Distributes type, cuts rules, pulls machines, stenotype, order and arranges and takes care of proofs by hand or on proof press. Corrects proof returned from proof-stock. Assists customers in making Corrections prepared from proof-ster, Elliott-Fisher ad-selections. Answers questions, gives reader, after approved turns it dressograph, etc. directions. Makes sales, makes out over to stoneman. various kinds of sales slips. Gets Ad Compositor: Sets display ads floor manager's O. K. on irregular and some of the headlines in news-transactions. Reports to buyer movement of stock. Sends sales slip with money and goods to inspector. Counts "takes" in proper order, places back change and gives it with parcel them on a galley, numbers them, to customer. Sends sales slip with money and goods to inspector or sends yes operator or proves them money and check up tube. (In some himself. Keeps general track of stores salesperson operates cash register and wraps merchandise, etc. Takes assembling. Newspaper. weekly and yearly inventories, etc.)	With copy assembles type by machines, adding matter to determine the success or failure of the measure, picks up type from case, chimes, bookkeeping machine by determining merchandise justifies and spaces it in stick, and chimes, mimeograph, turnover, service, and the reputation transfers each stickful to galley. Distributes type, cuts rules, pulls machines, stenotype, order and arranges and takes care of proofs by hand or on proof press. Corrects proof returned from proof-ster, Elliott-Fisher ad-selections. Answers questions, gives reader, after approved turns it dressograph, etc. directions. Makes sales, makes out over to stoneman. various kinds of sales slips. Gets Ad Compositor: Sets display ads floor manager's O. K. on irregular and some of the headlines in news-transactions. Reports to buyer movement of stock. Sends sales slip with money and goods to inspector. Counts "takes" in proper order, places back change and gives it with parcel them on a galley, numbers them, to customer. Sends sales slip with money and goods to inspector or sends yes operator or proves them money and check up tube. (In some himself. Keeps general track of stores salesperson operates cash register and wraps merchandise, etc. Takes assembling. Newspaper. weekly and yearly inventories, etc.)	Operate calculating machines, adding machines, mimeograph, typewriter, Elliott-Fisher ad-dressograph, etc.
I. Main Advantages and Disadvantages	Meeting and sizing up people. Knowledge of stock and materials. Salesmanship instruction in some stores, forms and history of merchandise and its manufacture, stimulating sense of color, texture. Opportunities for advancement.	Variety in copy and necessity for originality in designing pages and mechanism, speed, and in selecting the composition types.	Interest in results, speed, Mental alertness, stimulates growth. Usually satisfactory working conditions.
(a) Factors that interest and develop the worker	Nervous strain during rush hours and from incessant demands of customers. Long hours of standing. Responsibility of handling money and an operating cash register where used.	Close application and accurate handling of small pieces of type. General demand for accuracy operators. Excessive demands on accuracy and speed tend to cause nervous strain.	None, if reasonable demands are made upon operators. Excessive demands on accuracy and speed tend to cause nervous strain.
(b) Factors that cause physical or nervous strain	None.	None.	None.
(c) Factors that strict mental growth	Basement work not always satisfactory because of poor ventilation dampness of washed air.	None ordinarily, but an exceptional case of lead poisoning has been reported.	Dirty work on some machines occasionally causes operators to avoid it. Slight possibility of accident.
(d) Factors that are in other respects important as affecting the welfare of workers (i. e., liability to accident, occupational diseases.)	Intermediate. High school preferred by some of the largest stores.	Good elementary or high school education.	Intermediate school, high school desired.
3. Qualifications and Training Needed	General education Necessary technical education	Must know stock as to kind, variety, quality and values of merchandise, position. Point system, measurement on shelves or in dept. as well as weight. Principles of design, color as in reserve. System of sales slip harmony and lettering in the com-store well enough to direct customers of sketches, layouts, diagrams. Must know approach and all other weights, and kinds of paper. Elements of a sale. Display stock. Amount of material required for finished article.	Typesetting, proofreading and imposition on shelves or in dept. as well as weight. Principles of design, color as in reserve. System of sales slip harmony and lettering in the com-store well enough to direct customers of sketches, layouts, diagrams. Must know approach and all other weights, and kinds of paper. Elements of a sale. Display stock. Amount of material required for finished article.
c) Manipulative skill	Showing and presenting merchandise. Knack of setting, making up and Measuring and handling goods. Operating cash register in some stores.	Quick memory, mental alertness, sonality, memory, good eyesight and accuracy, initiative, patience, color sense, neatness, honesty, accuracy, painstakingness, system, orderliness, originality, ability to nees, and neatness, Artistic sense co-operate and follow directions.	Handling of machines. Quantity of work is determined by individual capacity.
d) Other requirements: Qualities such as accuracy, etc.	Courtesy, good will, good taste, personality, memory, good eyesight and accuracy, initiative, patience, color sense, neatness, honesty, accuracy, painstakingness, system, orderliness, originality, ability to nees, and neatness, Artistic sense co-operate and follow directions.	Accuracy, quickness, mental alertness, neatness, orderliness. Operators of Elliott-Fisher machines, should have bookkeeping.)	Accuracy, quickness, mental alertness, neatness, orderliness. Operators of Elliott-Fisher machines, should have bookkeeping.)

¹This investigation was conducted by Margaret Boland, Flora Anderson, Alice Gordon, and Grace Jones.²This investigation was conducted by Rex B. Cunliffe, D. E. Dunham, and N. E. Craig.³This investigation was conducted by Ruth L. Ross, Grace S. Robinson, Edna E. Bromley, and Helen M. Blue.⁴This investigation was conducted by Katherine M. Gartner.

OF UNRELATED OCCUPATIONS AS TO NATURE OF WORK, MAIN ADVANTAGES AND TRAINING NEEDED

Candy Making ⁴	Nursing ⁵	Industrial Chemistry ⁶	Toolmaking ⁷	Carpentry Trade
Preparer	Practical Nurses	Special Chemist	Die-Maker	Carpenter (and Joiner)
(Work may be done sitting or standing.) Sorts nuts, blanches and cuts nuts, washes and cuts fruits. Keeps bench and dishes clean and orderly. Assists moulder, wrapper, and packer. Places the whole fruits and nuts on creams, where nuts on creams, where nuts and fruits are the decorations.	This group includes persons without any particular training or registration. The Michigan State Law provides for the training and registration of so-called "trained attendants" but none of these were found in Detroit in the course of making this survey. Occasionally practical nurses were found acting as nurses aides, that is assistants to trained nurses. Assisting in hospitals, chronic cases, caring for sick in the home, carrying out physician's orders, care of house and children.	Every plant has some unusual substances to be tested, new materials come in—a competitor's products, oils, waxes, paints, waste, ores, and, in some cases, foods and drugs. The routine chemist would not know how to handle these special tests. The special chemist also looks for the causes whenever there is trouble which routine tests do not get at. He also improves factory processes and products. This work often takes him out into the plant to observe operations and to collect samples.	Making, blanking, and forming dies for adding machines, typewriter, and automobile parts.	Does house framing and inside woodwork on frames, trim, jamb moldings, etc.; put window frames in doors, etc.; builds simple staircases, etc.; interior finishing hard and soft wood; makes concrete forms, etc.
Pleasant and comfortable kind of work. Offers little to develop the worker, except in ability to follow directions and doing detail work well. None.	Varied types of homes and people.	New samples and different products have to be analyzed. Specifications for the purchase of material have to be worked out. Each new problem met and solved develops confidence.	Variety of work offered; new problems to solve.	This work considerable from day to day, outside work is and invigorating.
Little talking during work, therefore 8 hours offer no exchange of ideas. Safe and clean work; not monotonous.	Very long hours, hard physical work, usually great responsibility.	Exacting requirements of accuracy and attention to detail would be trying to one of nervous temperament.	If any not continuous	Physical strain; heavy work.
Little general education needed, elementary school would be sufficient. Cleanliness and wholesomeness needed.	Not enough knowledge. No time for reading, lectures, amusements, etc., when on the case. No hazards if careful, otherwise infections, communicable diseases.	None.	None.	Specialized such as shiny laying, etc., varied.
Speed in detail of work.	Eighth grade, at least, desirable, not standard. Must read and write English. Taking of normal respiration, pulse, temperature. Common treatments under orders.	College graduate.	8th grade, preferably high school.	Some dangerous from fire.
Free from every trace of communicable diseases, present Board of Health certificate.	Practice in housework and ordinary care of the sick.	Same as for routine with wider knowledge of special apparatus such as colorimeters, stills, extractors.	Operation of all standard machines, and bench work to precision limits.	Skill in handling tools.
	Cheerfulness, high standard of service, good moral character, sympathy, sense of responsibility, etc.	Same as routine, together with initiative and self-confidence.	Accuracy, speed, application, adaptability, good eyesight, good health; ability to visualize; steady nerves.	Accuracy, strength, good eyesight, adaptability, alertness.

⁴This investigation was conducted by Gladys Little and Helen Bradfield.⁵This investigation was conducted by Sherman R. Wilson.⁶This investigation was conducted by George H. Snadden and James P. McGuinness.⁷This investigation was conducted by Earl M. Stauffacher.

CHART II. SHOWING CONTINUED ANALYSES OF EACH POSITION AS TO POSSIBILITIES IN REQU
(Continued from Chart I which lists (1) Nature of Work; (2) Main

VOCATIONAL INFORMATION	Salesperson	Compositor	Office Machine Operator
Possibilities in Requirements of Occupation	Instruction in system. Definite salesmanship instruction given individually and in groups in the largest stores.	Preceptor system. No organized apprenticeship system. Shifting worker	None, but usually individual instructions are given for using the different makes of machines.
) Provisions made for systematic instruction.	Kind, variety, etc. of merchandise. Store procedure and regulations. Principles of salesmanship if work is intelligently done.	Sufficient knowledge to make the worker a profitable producer. Ideals of the craft and technical knowledge.	Knowledge of machine mentioned or those used in particular office in question.
) Necessary or technical knowledge	Deftness in handling goods, displaying stock, and operation of cash register (where used).	Necessary facility in handling type and its composition.	Accuracy and speed as required in work.
) Manipulative skill	Entirely, but study of salesmanship a great aid.	Entirely with such outside library and research work as is needed.	Usually slight without supplementary training.
) Extent to which occupation can be learned in establishment	Head of stock, assistant buyer, buyer.	Apprentice, journeyman, make up, stone man, machine man, proofreader, foreman.	To higher clerical positions
) Line of promotion	Generally flat wage is between \$12.00 and \$25.00.	First year \$12, second year \$15, third year \$20, fourth year \$25, fifth year \$30 to \$35.	\$18.00 to \$37.50 a week depending upon nature of work.
Remuneration	"Spiffs," prize money, etc., for moving slow selling merchandise and oversales.	\$40. Union Scale \$46.50.	None.
Wages	About 8 hours.	48 hours a week, open shop. 44 hours a week, union shop. (Open shop conditions largely in Detroit.)	About 8 hours.
Hours of Work	Between Thanksgiving and Christmas, April to June, and during special sales. February, July and August.	None.	None
Seasonal Demands in Work	Constant for most. Extras for busy season.	None.	None.
Busy season	February, July and August.	None.	None.
Slack season	Constant for most.	Slight.	Constant.
Fluctuation in employment	Extras for busy season.	20% in Detroit.	No.
Are Workers Organized?	No.	17 years.	17 or older.
Entrance Age	17 years up. 18 years minimum in some stores.	4 to 5 years. Union requires 5.	2 or 3 weeks, depending on individuals.
Time Required to Learn Duties	One week to 2 months.	No.	Yes.
Is Supply of Labor Adequate to Meet Demand?	Supply not always adequate.	Not enough apprentices.	
Is Demand for Labor Increasing or Decreasing?	Increasing.	Increasing. General industrial growth of country.	Increasing.
What is the Source of Supply?	Those rising from minor positions or coming from other stores. Inexperienced people. Married women.	Apprentices recruited from schools and journeymen.	Public school, bureau and private agencies, business schools, commercial high schools, factory schools.
Common Deficiencies of Workers	Lack of interest; failure to appreciate opportunities. Insufficient knowledge of merchandise; disobedience to rules. Lack of general education.	Lack of ambition, low ideals, failure to stick to work.	Lack of concentration, understanding of work, personal responsibility, neatness, speed.

REMENTS OF OCCUPATION, REMUNERATION, HOURS OF WORK, SEASONAL DEMANDS, AND THE LIKE
Advantages and Disadvantages; (3) Qualifications and Training Needed

Preparer	Practical Nurses	Special Chemist	Die-Maker	Carpenter (and Joiner)
Some individual instruction in methods of doing work. None.	If registered with Central Bureau, one lecture per week. (Hope to give course at Cass.) Dependent upon job and doctor.	Instructions as to special methods are given by head chemist. A broad scientific training is required as a foundation.	None, except where there are apprenticeship or training departments. Application, best acquired in the plant by experience.	There is no apprenticeship system in this city. Workers are upgraded.
Skill involved in simple operations for speed and accuracy. This work can be learned entirely in the factory.	Skill in caring for the sick and in house work by repetition of duties. If capable, may be entirely learned on cases under doctor or supervisor.	Experienced men are required. Special applications may be learned on the job.	Speed and accuracy in all specialized operations.	This may be acquired studying trade books going to evening classes studying the building trades. Speed and accuracy in hand and machine operations.
Little opportunity for promotion to better positions.	None unless to take attendants' courses or regular training.	May go into research work, become head of department, or even superintendent.	To executive depending on ability, experience, and training.	Practical methods best desired technical.
\$14.00 to \$22.00 a week. The majority receive \$16.00 and stay there.	\$28 average a week with board.	\$175.00 to \$250.00 a month.	\$75 to \$1.50 an hour, depending on experience, training, and service.	\$85 an hour (union).
Sometimes an opportunity to buy stock in the company.	Usually none.	None.	Stock certificates; anniversary checks; group insurance; apprenticeship bonus.	Double time for overtime during the busy season.
8 a. m. to 5 p. m. One hour for lunch. Saturday afternoon off.	12 to 24 hours with uncertain relief depending upon case.	Eight or nine hours.	8 to 9 hours a day; 40 to 50 hours a week.	8:00 a. m. to 5:00 p. m. with one hour for 8 hours a day, on Saturday.
Before Christmas and Easter, 8 months heavy production. 4 months of light production. Steady work for most regular employees.	Always in demand. Practically none. Fluctuates greatly.	All year. None. Very little.	Dependent upon general manufacturing conditions. Same. Employment usually steady.	During summer months. During winter months. Depends upon the state of construction work.
No.	Nurses Registry effective in collective bargaining. All do not use Directory.	No.	No.	Approximately 1,000 carpenters and about 1,000 non-union carpenters.
17 years. (15 or 16 if allowed working papers.)	18 years and up as long as useful.	21 to 45.	16 to 18 years of age.	Nearly all skilled workers are over 18 years of age.
A few days to one week.	No requirements.	Four to six years beyond high school.	4 years or more.	About four years.
Yes, always.	Not enough who are really capable.	Yes.	Yes, at present.	Ordinarily the knowledge is inadequate to meet requirements.
Neither.	Increasing greatly.	Little change.	Increasing at present.	In comparison to other building trades, carpentry is a declining industry.
Girls leaving school and those following advertisements in windows or newspapers.	Through doctors and usually unreliable employment bureaus.	College graduates with scientific training, with experience in other plants.	Graduate apprentices; other shops; promotions.	Young men usually unskilled and untrained. Some unskilled carpenters, concrete form workers, outside work, or as laborers.
Disinterested, lazy, wasteful, quarrelsome or trouble breeders, lack of cleanliness, lack of speed.	Not reliable in carrying out doctor's orders; variation of personal standard; preparation too variable for safety.	Lack of sufficient scientific training.	Lack of mechanical ability; no originality; no native ability; dissatisfaction; too slow; lack of appreciation of the value of accuracy; lack of interest.	Representing unskilled and untrained men when he is unskilled and incompetent. Lacks knowledge and background.

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TABLE V. OCCUPATIONS IN NURSING

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CENTRAL SERVICE FOR EXCURSIONS AND INFORMATION

Another extended source of valuable information for assisting counsellors and investigators as well as teachers has been made available through an established Central Clearance Service. The different schools have access to this central plant-visitation service which arranges for, and schedules, visits with employers, firms, factories, courts, Public Library, Art Institute, and the like. Unnecessary duplications and conflicts are thus avoided, and all school representatives naturally benefit by pooling the results of their varied contacts, since a record is kept of each place visited. This central office record covers all information on the various activities of each establishment, their attitude toward visiting, preference as to days and hours, size of groups, age of students, etc. By means of complete records and revisions from time to time, this clearance service is peculiarly suited for assisting teachers and counsellors in planning the most worthwhile visits for classes, groups, and individuals.

Other types of much needed service that have been rendered by this office are: (1) Cataloging and filing information and literature on general education and vocational training courses in the United States. This includes a complete survey of the kinds and the qualities of the courses which are offered locally, whether in public or non-public institutions. (2) Securing various kinds of guidance information and factual material on occupations for school counsellors and others concerned. These continuous studies and other reliable findings, which have proved to be helpful sources of information, are made available for immediate reference purposes, in order to aid school counsellors, house principals, and classroom teachers in providing adequate counsel and guidance for the boys and girls in their respective school organizations.

VARIOUS METHODS OF DISSEMINATING INFORMATION

As the Detroit Public Schools are attempting to have systematic counsel with all children during their entire school attendance and during their early employment training and adjustments outside, desirable selections both from these different composite findings and

the more detailed information in the central office are disseminated through the following provisions for each school organization:

(1) Through initial interviews and conferences for classifying pupils and for encouraging those who are entering the school to think more seriously of their educational and occupational advantages.

(2) Through follow-up and adjustment of pupils who did not succeed in making tentative plans or suitable programs during their first year or years.

(3) Through special classes, clubs, and group meetings for talks and discussions by school representatives or by specialists who are qualified to speak and answer questions on specific occupations.

(4) Through courses of study and special provisions in English, social science, physical science, health education, practical arts, etc., by imparting related vocational information and by showing the connection between these subjects of instruction and the occupations which involve them.

(5) Through co-operative checking of cumulative records with respect to the results of all tests and especially for outcomes of each pupil's performance inside (and if possible outside) of school.

(6) Through all school and outside agencies which interview parents and children, investigate home and working conditions, and in any way pass upon the necessity for individual children to leave school.

(7) Through placement officers, co-ordinators, and others that advise, place, and adjust boys and girls who are qualified for part-time work, who desire positions upon leaving school, or who wish to transfer to other employment.

In connection with each occupation considered, the school counsellors co-operate with the different teachers in disseminating information relative to the nature of the work, the advantages and disadvantages, the qualifications and training, the possibilities, and the remuneration and advancement through reliable reading matter, group discussions, individual interviews, student reports, talks by specialists, and planned excursions. This organized information supplements that imparted through the regular school subjects by presenting such related facts as can help pupils to weigh values and

choose their future courses and life work. Aside from the direct guidance values, these studies also include brief interpretations of economic life, industrial ownership, labor problems, related organizations, scientific management, supply and demand, health conditions, and the development of our present-day producing and service groups, in order to encourage a wholesome attitude toward work and workers in each occupation studied. Typical divisions of such important life callings as mechanical pursuits, printing and publishing, mining, food manufacturing, textiles and clothing trades, professional and allied occupations, engineering professions, commercial occupations, and many others are studied profitably from time to time.

SPECIAL COURSE FOR IMPARTING OCCUPATIONAL INFORMATION

In the work developed at the Central High School, for example, a good part of the time was given to the study of individual occupations. After the topic, "Finding Your Place," had been discussed, each student was asked to select three vocations in which he was interested. During the semester, he was required to prepare a report on each of these vocations and present it to the class. In this way, the student secured definite information on the vocations he was interested in and each student in the class had the opportunity to get some sort of a view of the many opportunities open to boys and girls. No student was required to study all of the vocations that were discussed, although all were encouraged to take notes.

Before the student commenced his study, he was given material on "How to Find Out About a Vocation." Each student was required to prepare some sort of a preliminary report before he wrote the final one which was to be presented to the class, and for that reason he was also given a questionnaire to be used in his particular study. This questionnaire was adapted from the one which was adopted and used in securing data for training school counsellors. It is now available with the composite findings in bulletins that have been published in three parts by the Detroit Board of Education (see Charts I and II).

It will be noted that this questionnaire closely follows the topics listed in Table I, and that their numbering is much the same. Each

student was supplied with a bibliography, which included the local publications, and he was expected to do a certain amount of related reading. Magazines, newspapers, and many miscellaneous publications were consulted along with the reference books. However, it was made very clear that he must not depend altogether on information secured from current literature and books, but would be expected to consult with men and women engaged in the selected occupations, and to observe for himself, through direct contact with the work as it was being done, significant facts about important divisions of the vocations. As nothing he could read would give him an accurate conception regarding the vocation, he was expected to supplement his readings by conferences and observation. As the student found out important things regarding his vocation, he noted them on the spaces following the proper questions. When he had finished his initial survey, he brought it to the teacher for conference and approval. Then he was ready to get his report in final form for its presentation to the class.

Sometimes the report was read to the class. Where the group of students studying one occupation was large, the report was divided and a part was presented by each student. Incidentally, some of the reports were most interesting and some were quite dull. At times, students after presenting the report proper would entertain and enlighten the class by dramatization of some of the situations found in the vocation. One group studying the physician portrayed for the benefit of the class, a rather sketchy glimpse of a doctor's office, and a committee on music insisted on giving a concert. Each student presented his three reports at different times during the semester.

The following statements, and questionnaire were supplied to each one of the students in the class as a part of the assignment:

HOW TO FIND OUT ABOUT A VOCATION

In finding out about a vocation, there are two main sources of information: observation (seeing the work for yourself) and reading. When Benjamin Franklin was a small boy, his father took him about their city to all the shops where men in the different occupations could be seen at work; to a blacksmith shop, to a tailor shop, to a store, to a printshop, etc. In this way, young Ben had the opportunity to get some valuable first-hand information, which he

used later. To-day you can not do much better than follow this example. One young fellow recently thought he would like to be a dentist, so, happening to know some dentists, he visited them, saw them at work, looked at their tools, and asked all the questions he could think of about their occupation. Another boy who wanted to be a civil engineer, not knowing any engineers, visited some work which he thought might have been planned and was under the direction of civil engineers, saw what was being done, talked with the men when possible, and tried to strike up an acquaintance with those who seemed to be in charge. A girl who was interested in millinery, visited all the shops of that kind she could, and, exactly as the boys had done, tried to get all the information possible. You can easily get such first-hand information about almost any vocation in your locality, and it is always wise to get such information in addition to that obtained from reading. Apply this method to your own problem. How could you learn about your proposed vocation from observation? How would you go about it?

When Benjamin Franklin was a boy, there was practically no other way to get the necessary facts about an occupation except by observation, but there are now many books telling about the different vocations and good articles are appearing daily in newspapers and magazines. You will find a list of useful books in the last chapter of this pamphlet.² Read all of the books and magazines you can, and be sure to compare what you find there with what you found by seeing and asking. Don't fail to watch the newspapers for information about your vocation. Newspapers and magazines will give you the very latest information.

Following this chapter you will find a list of questions and answers concerning the occupation of salesperson in a department store. The questions are adapted from those used in the series of publications on "Opportunities and Requirements in Local Occupations," and the answers are taken from the section on department store occupations in Part I. Everybody has seen and done business with a retail store salesman, and knows fairly well many things about this occupation. Read this report over carefully, and you will discover what things one might well know about a vocation and how such questions are answered.

The best way for you to study your present choice would be for you to copy these questions on two or three large sheets of paper, leaving plenty of room after each question for the answer. Then, as you find out about dentistry, or law, or salesmanship, or mechanics, whatever your choice may be, you can note the information after the proper question. This is not only the best way, but it probably is also the easiest way. Try it and you will see if that isn't true.

²Cunliffe, R. B. *Plan Your Progress.* Central High School, Detroit, Michigan, 1923.

REPORT ON OCCUPATION

Occupation: Salesman

Student: John Smith

1. Make a list of the things which this worker actually does

Salesperson is a representative of the firm to the customer, and largely determines the success or failure of the store by determining merchandise turnover, service, and the reputation of the store. Keeps counter space in order and arranges and takes care of stock. Assists customers in making selections. Answers questions, gives directions. Makes sales, makes out various kinds of sales slips. Gets floor manager's O. K. on irregular transactions. Reports to buyer movements of stock. Sends sales slip with money and goods to inspector. Counts back change and gives it with parcel to customer. Sends sales slip with money and goods to inspector or sends money and check up tube. (In some stores salesperson operates cash register and wraps merchandise, etc. Takes weekly and yearly inventories, etc.)

2. Main advantages and disadvantages

a. What are the factors that interest and develop the worker?

Meeting and sizing up people. Knowledge of stock and materials. Salesmanship instruction in some stores, history of merchandise, and its manufacture, stimulating sense of color, texture. Opportunities for advancement.

b. What are the factors that cause physical or mental strain?

Nervous strain during rush hours and from incessant demands of customers. Long hours of standing. Responsibility of handling money and operating cash register where used.

c. Are there any factors restricting mental growth? If so, name them. None.

d. Name any other factors that are in other respects important as affecting the welfare of workers (*i. e.*, liability to accident, occupational diseases.)

Basement not always satisfactory because of poor ventilation or dampness of washed air.

3. Qualifications and training needed

a. What general education is required?

Intermediate. High school preferred by some of the largest stores.

b. What special or technical education is required?

Must know stock as to kind, variety, quality, and values of merchandise, position on shelves, or in department, as well as in reserve. System of sales slip for handling all kinds of sales. Know store well enough to direct customers. Must know approach and all other elements of a sale. Display stock. Amount of material required for the finished article.

c. What manipulative skill is required?

Showing and presenting merchandise. Measuring and handling goods. Operating cash register in some stores.

d. How long will the preparation take, or how long will it take worker to learn duties?

Six months to a year in the department.

e. What is the probable cost of preparation? None.

f. What school can one attend to prepare for this occupation? None.

g. Name any other requirements: qualities essential, such as accuracy, etc.

(1) Special health or physical requirements.

(2) Experience necessary.

(3) Personal qualities required.

Courtesy, good will, good taste, personality, memory, good eyesight and color sense, neatness, honesty, accuracy, ambition, originality, ability to co-operate and follow directions.

4. What are the possibilities in the requirements
of the occupation?

a. What provisions are made for the systematic instruction of workers? Instruction in system. Definite salesmanship instruction given individually and in groups in the largest stores.

b. What necessary or technical knowledge is acquired?

Kind, variety, etc., of merchandise. Store procedure and regulations. Principles of salesmanship if work is intelligently done.

c. What manipulative skill is acquired?

Deftness in handling goods, displaying stock and operation of cash register where used.

d. To what extent can the occupation be learned while at work?

Entirely, but study of salesmanship a great aid.

e. What is the line of promotion?

Head of stock, assistant buyer, buyer.

5. What income may be expected in this occupation
at first and later?

a. Give beginning salary or wages. How paid?

Generally flat wage is between \$12.00 and \$25.00. "Spiffs," price money, etc., for moving slow selling merchandise, and over sales.

b. What would the probable income be ten or fifteen years after entering the occupation?

c. What are the years of active work in this occupation?

6. What are the hours of work? About 8 hours.

7. Are the demands in work seasonal?

a. Busy season. Between Thanksgiving and Christmas. April to June and during special sales.

b. Slack season. February, July, and August.

c. Fluctuation in employment, if any. Constant for most. Extras for busy season.

8. Are the workers organized in unions or similar associations? No.
9. What is the entrance age? 17 years up. 18 years minimum in some stores
10. Is the supply of labor adequate to meet the demand? Supply not always adequate
11. Is the demand for labor increasing or decreasing? Increasing.
12. What is the source of supply? How can one enter the occupation?

Those rising from minor positions or coming from other stores. Inexperienced people.

13. What are the common deficiencies of workers?

Lack of interest; failure to appreciate opportunities. Insufficient knowledge of merchandise; disobedience to rules. Lack of general education.

14. References and sources of Information

This course was organized in two general divisions: (1) problems of the worker, and (2) studies of vocations. The nature of the vocational problems is suggested by the topics in Table VI. The student started with a consideration of his life as he is now experiencing it, and proceeded from that topic to the others, until he reached a discussion of the world he would live in after leaving school. This discussion involved some of the important economic factors which would greatly influence him. There is a close relationship between school life and vocational life which the student often does not appreciate. His successes and failures in school will often influence tremendously his successes and failures in his vocation. It was believed that he ought to know this; he ought to know about *what* he will gain from school and *how* he can get the most out of it. Of course, "Finding your place," and "How to find out

TABLE VI.—AN OUTLINE OF THE COURSE AS IT WAS FINALLY ORGANIZED

- I. Problems of the worker:
 - (a) Going to school
 - (b) Your opportunity
 - (c) Finding your place
 - (d) How to find out about a vocation
 - (e) Your studies
 - (f) Your first job.
 - (g) Success
 - (h) The greater world
 - (i) Wealth, wages, and thrift
 - (j) Books can help you

II. Studies of vocations:

- (a) Preliminary report; questionnaire
- (b) Final report; theme to be presented to the class.

about a vocation" were included, but a further explanation of these topics is hardly necessary. Experience has shown us the necessity for emphasizing "Your opportunity," for it was discovered in an examination of questionnaires which the 11th- and 12th-year students filled out for the Detroit Board of Commerce that 64 percent of the boys chose five occupations; 76 percent of the girls, five; and 83 percent of both boys and girls thought of only ten. Seventy-four percent selected vocations in the professional group, although only 5 percent of the gainful workers in the United States are found in that class. Forty-two percent of the girls selected teaching. Only one of the 581 students who filled out questionnaires indicated any interest in the industry which has made Detroit famous, the automotive industry, and very much less than one percent selected manufacturing, in which over 40 percent of Detroit's gainful workers are found. The student can make no choice unless he knows from what things he can choose, so a great deal of time is given to a survey of opportunities open to our boys and girls. Topics (f) and (g) refer, respectively, to getting a job and then making good at it. Topic (h) is a discussion of the organization of the usual business concern, a stock company, partnership, etc. In this discussion, the student also meets possibly for the first time, the employment manager and the welfare worker, and learns what strikes and lockouts are. The section on "Wealth, wages, and thrift" was included because the problem of capital and labor, the law of supply and demand, the principles of the determination of wages are of great importance to him. It was believed that the problems suggested by each one of these topics had a very close relationship with the student's vocational well-being.

GENERAL CONCLUSIONS

If our boys and girls are to be aided in making intelligent judgments and decisions as a result of knowledge and vision of relative possibilities and demands, it behooves the public school authorities to make reasonable provisions for each one of the two following

closely related activities. (These will require little or no additional expense, if all school representatives are seriously concerned with the problems involved.)

(1) Reliable surveys of the various local occupations to determine the importance of each division of work, the constancy of demand for employment, the opportunities for advancement, the working conditions, the remuneration and other rewards, the qualifications and training needed, and the like.

(2) Continuous opportunities for all pupils to study the results of these and other surveys and to make their own less reliable investigations both to assist in their educational and occupational choices and to add to their general education through some understanding of present-day requirements, conditions, and relationships.

While these typical surveys and studies are not designed to force early decisions upon pupils, recent investigations make it evident that there is need in every school organization for studying intelligently the problems of an effective choice, both as to self-expression and efficient service. In other words, the spirit of modern public school education suggests the urgent need for collecting, evaluating, and imparting reliable information about important industrial, commercial, and professional occupations. If our school instruction is to truly reflect the economic demands and the social activities and tendencies about us, these provisions for securing and using factual material should not become incidental in emphasis, but rather an increasingly definite and functioning part of all comprehensive school programs.

CHAPTER VI

VOCATIONAL GUIDANCE IN COLLEGES AND UNIVERSITIES

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The material drawn upon for this chapter was gathered in the latter part of the school year 1922-1923.¹ It is representative of practice and common opinion in 176 'standard' institutions of higher learning; including public, private, and sectarian colleges and universities of recognized standing throughout the country.

Assuming that these institutions typify practices and trends in vocational guidance among the colleges and universities of the country, the following generalizations may be stated:

1. Colleges and universities are increasingly recognizing obligation to provide both group and individual vocational guidance for their students.

2. Colleges and universities are increasingly recognizing that guidance is an integral contribution to education; that vocational or any other phase of guidance is separable from the process of education only for purposes of analysis or emphasis; hence that vocational guidance is most effective when given as one phase of a composite which in entirety is education itself.

3. Colleges and universities are increasingly recognizing that, under our dominant dynamic-organic educational ideal, vocational (professional) guidance is the core about which other phases of guidance—physical, cultural, educational, what not—may be grouped to the end of most effective motivation and establishment in serviceable social living.

¹Mr. Stone had gathered extensive information concerning the topic of this chapter in connection with his doctoral thesis, "Personnel Service in Education." The disastrous fire at Berkeley, which destroyed his entire library, interfered seriously with his program of publication. We persuaded Mr. Stone, however, to present rather hurriedly some of the main conclusions of his study.—*Editor.*

4. Colleges and universities are increasingly meeting the obligation imposed by the foregoing recognitions through the organization of specialized service of orientation and guidance which co-ordinates all helpful agencies and activities under unitary direction—agencies and activities curricular, extra-curricular, and extra-mural. The tendency is growing to designate this service as "Personnel," appropriating a term common to comparable service within the institutions of state and industry. While this term is new in education, the concept may be tentatively defined as organized, specialized effort by which the uniqueness of the individual student may be recognized, preserved, and served to the end of greater personal and social efficiency.

Among the 176 institutions contributing data upon this topic, 112 report some form of organization looking towards effective personnel (guidance) service. Three steps, or phases, are embraced within the comprehensive program of personnel towards which colleges and universities are tending: viz., selection of students, development, and placement.

Selection. There is definite indication of a more rigorous selection of students admitted to higher educational privileges. The college entrance examination is the most favored modern means; the Thorndike intelligence test is most frequently employed. Twelve of the reporting institutions use it, while nineteen colleges and universities employ quite a variety of other tests—Army Alpha, Thurstone, Otis, Terman, etc. Five make use of tests devised by local authorities. These tests are used, of course, for purposes beyond predictive bases in college admission and placement—for diagnostic and prophylactic purposes in student development. Generally, reports do not indicate very certain or clearly defined results from the use of these tests; however, it must be remembered that their employment in any way is comparatively quite recent. It is yet too early to have realized largely upon them. The outstanding trend is towards the use of tests in higher education. Only one institution reports a "lack of faith generally in psychological tests and vocational guidance."

Development. The second step, or phase, of the comprehensive program of guidance is that of development. Among the 112 insti-

tutions reporting systematized efforts at guidance,² various forms of organization appear. There are four fairly defined ones; viz., the faculty adviser, the dean adviser, the faculty advisory committee, and the co-ordinating director. There are no hard and fast dividing lines between these forms. On the contrary, there are various over-lappings in supplementary practices which in some cases approximate gradual transition from one type to another.

Thirty-seven of the 112 institutions reporting guidance organization employ the first-named, or faculty adviser, plan. This plan assigns from ten to thirty students to each faculty member, who acts as individual counsellor concerning vocational objectives and all matters pertaining to preparation for life careers—physical, educational, cultural, etc. This is the earliest type of organization and is probably an inheritance from the tutorial system in vogue in English institutions of higher learning.

In the largest sub-group of institutions—57 in number—responsibility for guidance is placed chiefly upon dean advisers (thirty report deans of men and twenty-seven deans of women, the last figure undoubtedly an incomplete report). The ‘student deanship’ has had a comparatively recent and rapid development, with emphasis upon the social phases of guidance. However, any college dean of men or dean of women who gives social counsel with a time perspective must of necessity do so in the light of professional (vocational) objectives. And the same responsibility is inescapable by the dean whose immediate contribution to guidance is chiefly educational.

Ten colleges and universities report faculty advisory committees. This is largely a still later development, a manifestation of the movement to centralize guidance in the hands of a restricted and specially selected body. These committees vary in size from six to sixteen. The larger numbers, however, are reported as unwieldy, and the tendency is toward even more restricted responsibility.

The smallest sub-group of institutions is that employing the co-ordinating director. Eight institutions subscribe in principle

²Even the sixty-four reporting no organization undoubtedly do not mean that guidance is wholly ignored; but rather that informal, unorganized influences are depended upon to meet the needs of their students.

and approach in practice to this plan. It is the most recent development; all of these colleges and universities have organized or reorganized upon their present basis within the last five years. This plan provides centralized responsibility, which insures initiation and conduct of guidance free from duplications and conflicts, while at the same time utilizing by co-ordination all possible co-operative agencies and activities. Two institutions may be cited as illustrative of advanced embodiments of this conception. These are Northwestern University and Dartmouth College, which have within the past year given a modest amount of publicity to their personnel ideals and organizations.³

On the whole, our reports from colleges and universities present a record of movement towards formal organization for guidance of students: in only one case is there a report of abandonment of organization after its establishment. On the other hand, in addition to the 112 institutions now possessing guidance systems, 17 report definite steps looking towards early establishment of systematized scientific service of personnel. For five of these, authorization has already been given.

While responsibility for guidance in the development of students is vested in most colleges, as indicated above, in one of four forms of organization, some institutions employ various supplemental agencies and activities. "Life career" courses, or courses in the study of occupations, are offered by eighteen of the colleges reporting; eight offer this course for freshmen only; one offers it for sophomores and juniors; one for juniors and seniors, while all others throw open the course for election by students of any standing. Credit for the course ranges from none to three semester hours.

Another supplementary type of guidance, the "vocational conference," tends toward a similar end by a less formal method. This consists of a series of meetings, occasional or at stated intervals, in which speakers representative of various life careers present in somewhat general outlines the conditions of their respective

³Hopkins, L. B. "Personnel at Northwestern," *Jour. of Personnel Research*, 1:277-88. Husband, R. W. "Vocational Guidance at Dartmouth," *Sch. and Soc.*, 11:407-8.

callings. These group conferences are usually followed by round-table and individual contacts. Twelve colleges and universities report programs of approximately this character.

Various other supplementary agencies and activities, useful in student development, are noted; *e. g.*, physical welfare, senior advisors, special library facilities, student self-government, pre-guidance through close articulation with high schools, cumulative records, and miscellaneous student organizations.

Placement. The final step, or phase, in a well-rounded program of personnel or student orientation and guidance occupies a place of increasing importance in institutional reports. Ninety-four colleges and universities attempt for some or for all graduates occupational contacts, *i. e.*, vocational placement. Procedure in this phase of service varies: eight report placement through specially designated officers; forty-two through bureaus; twelve through committees; and eighteen through "Y" co-operation. Two look to placement through alumni organizations only, while an even dozen others are served by both alumni organizations and placement bureaus.

Of the 94 colleges and universities attempting placement for graduates, 34 undertake a similar service for undergraduates also. Twenty-seven provide a measure of post-guidance, following up placements with cumulative records.

Our discussion has dealt thus far with the administrative activities of colleges and universities—what their officers do or think ought to be done as an adequate service of orientation and guidance—the institutional point of view. This covers undoubtedly the major phase of the subject. However, student experience and opinion are coming to occupy a place of increasing importance in higher education and should be included in any attempt to describe the situation in colleges and universities. A brief body of data may be included in the space allotted. These data come from (1) a group of 149 students eliminated from a representative university (entering class of 1919-1920), and (2) a group of 578 students of the same entering class who have persisted to the end of the course; *i. e.*, the senior class of 1923. Since the experiences and opinions of these two student bodies are substantially in accord, and since

only generalities may be stated here, the two groups will be considered together and some of their contributions offered as representative of student point of view. Approximately 12 percent of them matriculated in college without any defined life-career objective and more than half of them changed objectives once or oftener as a result of college contacts—the most common tendency being a shift towards vocations of more moderate cost, time, or intellectual demands. Approximately 10 percent are still without settled life-career objectives. This might appear as an expected or even desirable status according to one view of college vocational responsibility. This is not in consonance with student point of view, however. For while there is a minority of positive—almost vehement—opinion that college is not a vocational preparatory agency, yet it is a very small minority. The preponderant belief among students in higher institutions of learning is that college graduation should be equivalent to equipment for effective functioning in professional fields of the world's work—to use a very common expression: "The graduate should come out of college with more than just a diploma." This does not at all imply that the student attitude condones in general a narrow specialization. On the contrary, the attitude is that, while guidance should tend to be *vocationally* restrictive, yet college guidance should be *educationally* amply liberalizing and cultural. To these ends students demand an increasingly comprehensive program of guidance, and thus coincide closely with the view of institutional officials already expressed.

As to sources of guidance, student experience presents some interesting data. In the first place, only slightly less than half of the students making contribution to these data disclaim individual guidance of any sort. Their testimony shows that in general what guidance they have received has been group guidance, or guidance that is negative in character: "Positive guidance is always for the group; the *individual* is considered only in case of discipline."

Credit for individual guidance, among the half of the students who have been fortunate enough to receive it, goes mainly to the home, and only in minor amount to the school. Considering the chief sources, credit goes first to family, second to friends, and then to the schools—this despite the insistence of educationists that the

home is no longer competent to give adequate vocational and educational counsel. As to constructive suggestions for more adequate service of guidance in higher education, the student attitude strongly supports institutional demands for an all-round service of guidance which will co-ordinate all possible agencies and activities for individual, personal, positive service, *i. e.*, personnel service.

While space available for this report necessarily limits it to a rather bare outline of practices and trends in guidance as shown in both institutional and student points of view, the foregoing data indicate unmistakably that our colleges and universities are now moving toward a more comprehensive program of personnel service for students selected with discrimination, developed harmoniously in consonance with the common demands for culture and vocational efficiency, and judiciously placed in life pursuits where they may best serve their own interests and the higher needs of society.

CHAPTER VII

ILLUSTRATIONS OF VOCATIONAL GUIDANCE IN COLLEGES AND UNIVERSITIES

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Dr. Stone has presented in the preceding chapter a concise summary of vocational guidance in colleges and universities. I have been asked to supplement his significant data and conclusions by giving a brief account of what is done in a few institutions that have been most active in developing guidance programs. Dartmouth and Middlebury Colleges, and Stanford and Northwestern Universities have been chosen for this purpose. Three distinct types of organization are represented in the guidance work of these four institutions. In one the college dean is in charge; in another, a faculty committee; and in each of the others, a special officer.

DARTMOUTH COLLEGE¹

Dartmouth College has a Director of Personnel Research (the title has been changed recently from Associate Dean) appointed for the special work of occupational advice and placement. This officer brings together the large body of knowledge on file in different departments of the college about each individual student. "The registration cards of an entering class contain many valuable facts concerning the earlier life of the freshman; the office of the Physical Director has an excellent record of each man's physical condition; the Dean's office has a record of his scholarship, his prizes, honors and delinquencies; the Department of Psychology has a record of his intelligence rating based on the tests given each autumn to the freshman class; the members of the faculty have

¹Richard Wellington Husband. "Occupational advice." *Dartmouth College Magazine*, January, 1921.

undertaken to make personal estimates annually of all men under their instruction. In giving the personal ratings each faculty member estimates the student on four personal traits:

1. Intelligence—Ability to grasp a situation; alertness of mind.
2. Aggressiveness—Personal force; initiative; assurance; decisiveness.
3. Reliability—Evidences of solid character; dependability; sense of responsibility; perseverance; attentiveness; punctuality.
4. Personality—Bearing; neatness; courtesy; personal acceptability.

"The Associate Dean aims to have at least one private interview with each undergraduate every year. Freshmen are interviewed the second semester. An interview with a freshman takes the form of an analysis of his scholarship, his physical condition, his intelligence test, his interests and activities, his choice of a life career and his plans of preparation for it. All known facts about the individual are used in ascertaining the fitness of the individual for any suggested occupation. His experience up to date is considered and analyzed and finally each student is urged strongly to take some position involving regular work during the summer vacation for the purpose of trying himself out, of avoiding idleness, and of increasing his sense of responsibility and regularity."

MIDDLEBURY COLLEGE²

At Middlebury College the vocational guidance program is directly in charge of the Dean of the College. The program includes:

1. The collection of information about prospective students.
2. Required study of occupations in freshman year.
3. Lectures for freshman given by department heads.
4. A bulletin, "Programs for College Students."
5. Lectures by men of prominence in various important occupations.
6. A special vocational guidance section in the library.
7. An undergraduate committee for assisting in the choice of vocational speakers and subjects.
8. Assistance of the college paper.

²Edgar J. Wiley. "Organizing the Liberal Arts College for Vocational Guidance" (21 page bulletin).

9. A personal rating system.
10. Contacts with business and industry.
11. Counselling.
12. An appointment bureau.
13. Following up and securing the co-operation of the graduates of the college.
14. The keeping of records.

STANFORD UNIVERSITY³

Stanford University furnishes a good illustration of an institution in which vocational guidance is placed in charge of a faculty committee. The committee, as recently reorganized, consists of five members, including the dean of men and the dean of women.

It is the duty of this committee to co-operate with the departments of the university: (a) "In studying the vocations which are open to graduates of the university and the kinds of training needed by those who enter these vocations;" (b) "In disseminating among students the information necessary to make an intelligent choice of a vocation and to arrange a course of study preparatory to entering the vocation chosen."

The means for disseminating information so far used may be briefly stated as follows:

1. Establishing in the University Library a section of books, pamphlets, and bibliographies relating to vocations.
2. Providing occasional talks on particular vocations.
3. Holding vocational conferences on opportunities other than teaching open to women.
4. Arranging individual conferences between students and members of the faculty.
5. Publishing the "Bulletin of Vocational Information."

The Bulletin of 200 pages contains information concerning fifty-four occupations in the fields of agriculture, art, commerce, education, engineering, government service, home-economics, journalism, law, library work, medicine and public health, ministry, music, public speaking, science and applied science, social service, and writing. The information given covers nature of the work, training needed, personal characteristics essential to success, methods of entering the vocation, and opportunities for advancement.

³Stanford University Bulletin, October, 1923. "Vocational Information."

NORTHWESTERN UNIVERSITY⁴

Vocational guidance and placement at Northwestern University is in charge of a Director of Personnel. The plan for personnel work includes selection, development, and placement of students. As outlined by the Director at the beginning of his work, "development" includes bringing to the student some knowledge of the various possibilities ahead of him, and some information regarding what is involved in these various possibilities. Information brought together from the professional schools and from presidents and managers of big business concerns is made available to the students by lectures and in other ways. Minimal qualifications required and the additional qualifications desired are set forth in terms of (1) physical requirements, (2) education, (3) special training, (4) experience, (5) technical skill, (6) personal qualities, etc. The duties, responsibilities, usual hours of work, rate of pay, and natural opportunities for advancement are also presented.

In addition to providing students with descriptions of occupations, the Personnel Bureau will "endeavor to show each student a picture of himself." "We shall go into some detail in accumulating facts concerning his history up to the time he enters college. We shall summarize his scholastic marks in his various courses in college. We shall record his test results. We shall request the faculty members, who know him, to rate him in other than scholastic qualities. The student will also be requested to give us, as references, the names of three classmates from whom we shall secure ratings in these same qualities. We shall request him to give us a distribution of how he is spending his time. We shall record his activities outside of the classrooms, together with honors received and other miscellaneous facts that will help us to know his possibilities, his interests, and his all-round development as a man. With this information at hand, we shall discuss with him his record and any possible relationships between his record and his vocational preferences."

⁴L. B. Hopkins, "Personnel work at Northwestern." *Jour. of Personnel Research*, October-November, 1922.

CHAPTER VIII

OBJECTIVE MEASUREMENTS IN EDUCATIONAL AND VOCATIONAL GUIDANCE

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It is the aim in this brief presentation to select certain data which deal with measurement in education and particularly with measurement in the field of vocational guidance. Such a wealth of material on measurement is now available that a complete review of it is both unnecessary and impracticable. Vocational guidance, in evaluating the ultimate product of education in terms of social welfare and industrial efficiency, finds its problems closely bound up with many other significant phases of education. Therefore, no apology is offered, if certain cognate topics of education are treated in order to give a more complete and worthy setting for the consideration of vocational guidance.

ORIENTATION IN EDUCATIONAL GUIDANCE

It would be quite difficult, if not impossible, to initiate a new movement in education and expect to limit its application to that particular field alone. The forces which mould our educational processes are not functioning as isolated factors. They act in combination. It has frequently happened that practises in education have initiated changes so radical and so remote from their source that their original sponsors are unable to control the flood gates they have unexpectedly and unwittingly opened. Therefore, the writer feels a certain responsibility in dealing with educational and vocational guidance to make note of some of the other aspects of education which will also be affected.

Proper vocational placement implies proper vocational education. Proper vocational education implies wise educational guidance. Guidance in its larger meaning is finally based upon specific

training in courses of study, upon knowledge of the pupil's ability, upon the adequate training of teachers, and in fact upon the entire host of factors which constitute modern education. More specifically, it may be noted that vocational guidance is concerned with the problem that arises when literally thousands of pupils are being dropped from school registers annually without adequate vocational training. It is beginning to be known that limitations of pupils' mental ability, poorly motivated teaching, and too stringent and arbitrary standards of promotion are more than incidental causes for this elimination. The traditional attitude—that the educational opportunity is there and that pupils may take it or leave it—can hardly be maintained any longer. Greater educational efficiency is the universal demand. When it is really known that large numbers of pupils are educational problems, the school must revise its instruction to meet practical needs. In this manner the pupil, rather than the course of study, moves into the focus of attention. Vocational education, in its broadest sense, is forcing the adaptation of training to the needs of individual pupils.

As vocational education begins to get under way, it finds new and better types of school buildings suited to the newer education. It discovers teachers in the field better trained and conscious of newer objectives. It finds society demanding more efficient preparation of pupils for effective social and industrial efficiency. It finds instruction being measured carefully by finely calibrated educational tests. It finds a technique of intelligence testing going forward in evaluating the raw product with which it is to work. In short, the tools of a scientific education are at hand. Optimal results will follow in vocational guidance only when these aids are fully utilized. The vocational guidance worker finds his activities and coming favorably timed. But this coincidence carries with it greater responsibility for efficient results.

The writer, in presenting measurement in educational and in vocational guidance, has limited his discussion chiefly to the field of mental measurement for three reasons: (1) He believes that the problems arising from differences in intelligence are closely related to problems of guidance; (2) He considers that the technique and methods of mental examination can be used successfully in the

field of vocational and aptitudes tests; (3) He is better acquainted with this particular field of education. The discussion which follows will be grouped around the mental differences in children and in adults, and the significance of these differences for education and for industry. Brief mention of factors other than intelligence will be made. Finally, methods of presenting results and the function of suitable records will be considered.

MENTAL DIFFERENCES IN CHILDREN

The use of standardized intelligence examinations dates back less than twenty years to the appearance of Binet's first scale in 1905. In less than two decades the movement has developed rapidly, until to-day it is well established as an exact science. With the growth of testing have come statements that mental differences between individuals are tremendous. This discussion will be limited to the actual differences which are known to exist.

The extreme differences mentally between the idiot and the genius have been recognized from early times by all classes of people. The more subtle differences, however, between the dull and the average mind, or the average and the bright, have often passed unnoticed. The mental-age differences, by years of chronological or actual age, between those who are barely above the level of the feeble-minded and those who are just short of very superior in intelligence are shown in Table I. The approximate percents of children falling within each age group are suggested by Terman,¹ and are based upon the distribution of intelligence quotients of 1,000 unselected children. Terman states that approximately 20 percent of all children have intelligence quotients ranging from 70 to 90, 60 percent from 90 to 110, and 20 percent from 110 to 130. It may be noted that the three groups—the dull, the average, and the bright—corresponding to the intelligence quotients just listed, differ markedly in mental age from early childhood and that the gap becomes wider as they advance toward maturity. For example, it may be noted from the first line of Table I that the pupils who are six chronologically range in mental age from 4 years and

¹L. M. Terman, *The Measurement of Intelligence*. Boston, 1918.

2 months to 7 years and 10 months, or three years and eight months. While this illustration represents an extreme condition, nevertheless the differences between the average of the dull and the average of the bright in this particular year are at least two years of mental age.

TABLE I.—MENTAL-AGE DIFFERENCES, BY YEARS

Chronological Age	Dull, 20 Percent			Average, 60 Percent	Bright, 20 Percent
	I. Q.	70	90	110	130
6-0	4- 2	5- 5	6- 7	7-10	
7-0	4-11	6- 4	7- 8	9- 1	
8-0	5- 7	7- 2	8-10	10- 5	
9-0	6- 4	8- 1	9-11	11- 8	
10-0	7- 0	9- 0	11- 0	13- 0	
11-0	7- 8	9-11	12- 1	14- 4	
12-0	8- 5	10-10	13- 2	15- 7	
13-0	9- 1	11- 8	14- 4	16-11	
14-0	9-10	12- 7	15- 5	18- 2	
15-0	10- 6	13- 6	16- 6	19- 6	
16-0	11- 2	14- 5	17- 7	20-10	

By the time these pupils have reached the age of ten years, the mental-age range has increased to fully six years, and by the age of fourteen to eight years and four months. Although relatively few examinations by the individual Stanford-Binet have been carried out upon large numbers of unselected pupils, the scores of pupils upon group intelligence tests for thousands of cases bear out the general trend of differences suggested in Table I.²

MENTAL DIFFERENCES IN ADULTS

We have learned more about mental difference in children than in adults primarily because children have been the subject of experimentation in the schools of the country. The one chief exception to this rule was the application of intelligence tests to about 1,700,000 men in the United States Army during the late war. The purpose of the examination was to assist in more homogeneous

²The writer is conscious of the discussion which has arisen over the point at which mental age appears to cease development, but he feels that the general tendency of Table I is of more importance than the exact limits, which are certain to be settled later on by extensive experimentation.

classification of soldiers and the proper conservation of talent. The examination principally employed for this study was the well-known Army Alpha test. The maximal score on the Alpha test is 212 points. Enough cases were examined by the individual Binet examination to furnish some mental-age equivalents for Alpha scores. The results of the army testing are shown in Table II.

TABLE II.—RESULTS OF THE ARMY ALPHA TEST (1,700,000 RECRUITS)^a

Score	Rating	Mental Age in Years	Percent	Description
135-212	A	18.0-19.5	4.1	Very Superior
105-134	B	16.5-17.9	8.0	Superior
75-104	C+	15.0-16.4	15.2	High Average
45- 74	C	13.0-14.9	25.0	Average
25- 44	C—	11.0-12.9	23.8	Low Average
15- 24	D	9.5-10.9	17.0	Inferior
0- 14	D—	0.0- 9.4	7.1	Very Inferior

The data of Table II tend to confirm the general limits of intelligence suggested in Table I. In fact, the mental-age limits of the lower 24 percent of the adult population indicated by ratings of D and D— are fully as low as the limits of the thirteen-year-old group and are much lower than the limits of the dull group at sixteen years chronologically in Table I. While the writer recognizes that some controversy has arisen over the validity of the Army Alpha scale as a measure of general intelligence and over the validity of the United States Army as a representative sample of the adult population, nevertheless he firmly believes that in the main the mental limits in Tables I and II approximate the actual conditions. The significance of mental differences in adults with respect to the problems of educational and vocational guidance will be discussed later under a different topic.

MENTAL DIFFERENCES AND EDUCATION

It has been generally recognized that the feeble-minded are so deficient in intelligence as to be unable to master the traditional courses of study in our elementary or high schools. It has also been

^aClarence S. Yoakum and Robert M. Yerkes. *Army Mental Tests*. New York, 1920.

known that exceptionally bright pupils can do more than the usual amount of work. Reduced to more exact terms, these statements mean that the educational training which a pupil is able to assimilate is dependent upon his mental development. In short, educational progress is determined in large part by mental age. Studies by Terman and others point to the fact that until a pupil's mental age is above six years he cannot do the traditional first-grade work satisfactorily. In like manner his mental age must equal his annual development of chronological age or he drops behind and becomes educationally retarded. Conditions in our schools with respect to retardation and elimination have been studied ever since the appearance of Ayres' *Laggards in Our Schools*, in 1909. Irregular attendance, hypertrophied tonsils and myopic optics were cited as the chief causes of pupil failures, which amounted to as many as twenty or thirty percent annually. The drive for the improvement of these factors has been very much worth while, but it has not much altered the original condition because that is really dependent upon differences in mental ability. By referring to Table I again it will be noted that fully twenty percent of the pupils who are six years of age chronologically are less than five years in mental age and therefore unable to master the traditional first-grade work. If we merely allowed all pupils to try the usual course, we would expect the bright group at the age of fourteen to be graduating from the high school by virtue of their superior ability, the average group would be in the ninth grade, while the dull group of the same age would be scarcely above the sixth grade and would be eliminated from school through release of compulsory statutes before they reached the junior high school. If this program should be allowed to carry itself out automatically, the dull pupils would spend two or more years for completing the first grade and approximately two years for each of the subsequent grades. Quite aside from the discouragement which results from such practices, this group would never reach the grades where it is feasible to offer vocational guidance. The solution of the difficulty lies in the adaptation of the courses of study to the ability of pupils rather than in setting up a uniform standard for all pupils which is not adapted to their needs. This program calls

for simplified courses of study which will be fitted to the dull group comprising about one-fifth or one-fourth of all pupils, and an enriched course which will challenge the interests of the bright group. In this manner practically all pupils will progress regularly and feel a satisfaction in doing well, work which is suited to their needs and aptitudes. This issue must be squarely met. Merely retarding or accelerating pupils to fit their mental age to the old type of course is not sufficient.

This program calls for educational guidance of the first order. The discovery of the abilities of pupils and the recognition of their traits other than intelligence must be undertaken. Psychological insight and training must be called into play in determining how the mind of the dull or of the bright child works. It will be found that the dull child is apt to be poor in observation or perception and not even to notice the obvious labels, such as "door," placed on the proper objects to assist him in learning. He is apt to have a short memory span and therefore he does not get the entire impression nor retain short units of it except through continuous drill. He has limited powers of judgment and cannot manage his usual affairs with the prudence expected of him. When these traits are interpreted in terms of instructional needs, we find that in such tool subjects as handwriting dull pupils adapt themselves to drill and repetition which are necessary to fix the impressions of the letters and to afford practise in muscular co-ordination. The bright child needs less training in these factors and takes little interest in handwriting unless it has a subject matter which changes continually. As a result of his general incapacities, the dull pupil falls heir to all manner of educational errors, such as writing the digits reversed or "mirror-writing" or multiplying partial products in exercises in multiplication. If we continue, through lack of proper educational guidance and faulty instruction, to foster such defects, the dull pupil goes out from school to an uncertain vocational career with a veritable bundle of unfortunate errors for which he is little to blame.

The schools must proceed intelligently in educational guidance. They must take into account the conditions which are being pointed to them. They must recognize that the one-course-for-all plan never

has been effective and probably never will be effective. They must take seriously the statement of mental differences such as is shown in Table I. Finally, they must take into account the psychological problem involving the innate differences in mental make-up evidenced by dull and by bright pupils.

MENTAL DIFFERENCES AND INDUSTRY

We have already shown in Table II that the adult population tends to carry up from youth its differences in mental ability. These differences are not lost in the shuffle of industry. Industry, as well as the school, makes demands upon intelligence. Some light is thrown upon this relationship in Table III.⁴ In this instance, again the data are drawn from the army test results, by occupations. Table III shows that unskilled labor as a group makes a median score of 35 points on the Army Alpha test and that the middle fifty percent of that group range in score from 21 to 63 points. In sharp contrast to this level it should be noted that engineer officers have a median score of 157, with an interquartile range from 134 to 184 points. From this table it is strikingly evident that intelligence is a selective factor in industry.

Although there is a marked tendency to a positive relationship between industrial trades or professions and intelligence, the conditions within any particular trade have caused no little confusion as to the value of the intelligence test as a selective factor for that particular group. The situation can probably be explained in the following manner. As an example, let us consider the range of the middle 50 percent of telephone operators, which is from 58 to 99 points on the Alpha scale. This range is as low as the average score for butchers and as high as the average score for bookkeepers. The telephone operator who barely qualifies in intelligence with a score of 58 is probably conscious that she is competing in a class above her level of ability, so she applies herself very diligently to maintain her position. The operator who stands at the upper end of the scale at 99 points feels that she is above the average of the group and does not need to exert herself to maintain her standing.

*Clarence S. Yoakum and Robert M. Yerkes, *Ibid.*

TABLE III.—OCCUPATIONAL INTELLIGENCE LEVELS, BASED ON 36,500 MEN
IN THE UNITED STATES ARMY, ON THE ALPHA SCALE

Occupation	Median Score	Range Mid 50 Percent
Laborers (Unskilled)	35	21 to 63
Semi-skilled Labor—		
Cobblers	39	23 to 67
Teamsters	41	23 to 68
Farm workers	42	24 to 70
Barbers	43	22 to 70
Horse-shoers	44	25 to 70
Skilled Labor—		
R. R. shop mechanics	45	26 to 83
Bricklayers	48	23 to 81
Cooks	49	28 to 79
Bakers	53	35 to 83
Painters	53	31 to 79
Blacksmiths	54	29 to 83
Bridge carpenters	55	27 to 84
General carpenters	57	33 to 85
Butchers	58	33 to 85
Locomotive enginemen	59	33 to 82
Machinists	61	33 to 86
R. R. conductors	62	40 to 84
Plumbers	62	38 to 87
Tool makers	63	41 to 88
Auto repairmen	63	41 to 89
Chauffeurs	63	38 to 90
Toolroom experts	64	43 to 88
Policemen-detectives	64	44 to 89
Auto assemblers	65	44 to 97
Ship carpenters	66	49 to 95
Business and Clerical—		
Telephone operators	70	58 to 99
Concrete construction foremen	75	48 to 116
Photographers	77	52 to 104
General electricians	82	58 to 110
Telegraphers	84	59 to 107
R. R. clerks	92	66 to 116
General clerks	96	74 to 123
Mechanical engineers	98	63 to 133
Bookkeepers	99	78 to 126
Dental officers	106	84 to 130
Mechanical draughtsmen	112	79 to 134
Stenographers	115	93 to 142
Accountants	117	101 to 145
Professional—		
Civil engineers	125	98 to 147
Medical officers	130	101 to 163
Army chaplains	150	109 to 173
Engineer officers	157	134 to 184

In fact, she may be preparing for some trade at a higher level and has only a temporary interest in telephone operating. The result is that the poorest in intelligence is fair or good as a telephone operator while the best in intelligence is fair or indifferent in her work. In this manner it may come about that success in telephone operating seems poorly related to intelligence. The test, however, has value in indicating about the level of intelligence that should expect to take up that particular occupation. Those who are in charge of the training should have fair warning that certain applicants will not remain long, whereas others who have fair ability can be expected to remain longer. If by chance a group who tested far below 58 points were to attempt telephone operating, their inferior product and poor ability would tend to show a positive relationship between intelligence and success in operating as demonstrated in the higher group who actually qualify. The determination of the lower and upper levels of intelligence necessary for any trade, profession or occupation and the prediction of permanency of service are doubtless the greatest services that will come out of intelligence testing in industry.

Experimental work on personnel with respect to intelligence has already produced some interesting results. In some lines of salesmanship, for example, where the demands upon intelligence are comparatively simple, there is little relationship between intelligence and success. In other lines, however, where the job demands complicated mental ability, success is highly correlated with intelligence. However, it is not always true that the positions which carry the highest responsibility are filled with those who possess the highest intelligence. In fact, the opposite has been shown to be true in some callings. Thurstone, for instance, reported that the mental test scores of lieutenants on the Detroit police force were lower than the scores of the regulars or privates. Careful analysis of the situation revealed the fact that the positions of the police force offered so little opportunity for advancement that the more capable left for better jobs and the less capable remained long enough to hold the better positions. The rank and file of the police force are recruited from a transient group who use it as a training ground for other trades and occupations. This explanation

is not offered as an apology for the inadequacy of the intelligence test, but rather that the true significance of mental ability in a typical occupation might be illustrated. No doubt there are similar situations in many trades which further use of tests would bring to light.

As a result of observation, Bingham reports that individuals are frequently found who possess *too much* intelligence for the positions they hold. One might at first sight believe that the suggestion was not intended to be serious. Such, however, is not the case. The individual capable of abstract thinking finds his mental processes as surely at work at all times as he does the beating of his heart or the action of his lungs. If his position makes little demand upon his mental ability, he turns his attention to other fields. He may find no interest in his work from the mental point of view. Furthermore, he becomes dissatisfied and feels that he has not realized his true ambition. Or he may not be conscious of the real condition and believe that his chafing against restraint is a special trait of character of which he must remain justly proud. Such misdirected effort and energy, both wasteful to society and harmful to the individual, may well challenge those who are assuming the responsibility for proper educational and vocational guidance.

That marked differences exist between the intelligence level of unskilled labor and that of the higher professions cannot be denied. The lesser differences at the central levels of industry, complicated as they are by many other factors, such as interest, effort, and personality, will be more clearly revealed and understood when the instruments of measurement for such traits are ready for use. If we are not convinced of the relationship which exists between intelligence and levels of industrial occupation, it is because we have not the necessary information which makes these subtle differences self-evident. There is little doubt but that they exist.

OTHER FACTORS AFFECTING GUIDANCE

Because emphasis has been placed upon the importance of intelligence as a factor in educational guidance and vocational education, it should not be inferred that intelligence alone is to be considered.

As a matter of fact, the psychologist who is most closely acquainted with the field of mental testing finds himself continually trying to evaluate other factors which tend to produce discrepancies between expected and actual performance.

An excellent attempt at the measurement of such factors appears in the Will-Temperament tests by Dr. June Downey.⁵ One of the features of these tests is the checking of that one of the pairs of traits which the individual believes more nearly describes himself. Traits such as "careful," "punctual," etc., are included in the list. The value of the test is not in the self-esteem which the individual holds for himself as shown on the traits he checks, but upon the amount of time he takes in making his decisions and the number of changes which he makes when asked to re-check them later a second time. At the first checking he is really being measured for speed of decision, and in the second instance he is tested for finality of judgment. The flexibility of his personality is measured further by various attempts at handwriting under irksome and troublesome conditions. These tests are based upon the hypothesis that certain characteristic traits will appear under the right amount of stress. Unless these attempts to test him are covered up under incidental activities, the person tested is apt to inhibit or conceal his true emotions. The success of this test and similar ones depends upon how well the true motives behind the tests can be concealed. The writer's experience with the Downey tests and similar tests, such as mirror-drawing, convince him that in most instances the desired effects can usually be attained.

Pupils frequently fail in school on account of anemia. They may fail because of poor attendance. They may fail because their unfortunate personality brings them into conflict with their classmates and brings official disapproval of the teachers for the same reason. Others are so self-willed and opinionated that they profit little from what the school does for them. The writer believes that the next few years will find completed tests for all manner of human deficiencies and delinquencies. With such analysis will come a new point of view upon the part of the school which will consider the diagnosis and correction of personal and social defects as im-

portant for child training as is the adjustment of courses of study to the abilities of pupils.

THE PRESENTATION OF RESULTS

In order that measurement in any field may be effective, methods of presenting the results, or scores, need consideration. Graphic methods of presentation appeal to the eye, and have generally proved very effective. The rapid development of a science in education has been due in part to presentation of tangible results of measurement so that they may be easily understood by the relatively untrained teacher and by the general public.

One needs merely to thumb the pages of any recent book on education to find not only graphs and tables of data, but often also a chapter on statistics. This tendency has grown so rapidly that there is a serious problem in choosing intelligently the type of graph or of table to present the results of measurement. We shall consider here only a few of the more recent devices used in test data. Among the first attempts was the expression of tendencies as an *average score*—the sum of the scores divided by the number of cases considered. The *median* is the typical midscore, or middle score, of a series arranged in order from highest to lowest. Both of these terms give no clue as to the amount of divergence by which any individual may depart from the average, the median, or other central tendency. In order to take this variability into account the *average deviation* and the *standard deviation* were devised. In the former case the result was obtained by dividing the sum of the amounts by which all cases differed from the median or average by the number of cases involved. In the latter case the procedure was essentially the same except that the differences were squared in order to give more weight to cases of extreme variation. While these measures of deviation have had considerable use, the derivation of results and even their interpretation are not generally understood.⁶

The method adopted to present results of the Binet examination is rather simple. The sum of scores, or credits, on this test is given

⁶For a detailed account of statistical methods in education, see Part I, Chapter III of the *Twenty-first Yearbook* of this SOCIETY.—Editor.

as *mental age*. Thus a mental age of nine years indicates that a pupil performed as well as nine-year-old pupils ordinarily do. An *intelligence quotient* (I. Q.) may then be computed by finding the ratio of mental age to chronological age. Thus a pupil of ten years of age who measures eleven years in mental age has an intelligence quotient of 1.10 (written as I. Q. 110). In a similar manner, educational achievement has been tested by standardized educational measurements and expressed as *educational age*. The *educational quotient* is expressed in the same manner as the intelligence quotient. These terms have the great advantage of being easily understood and interpreted. Unless the standardization of the tests from which the results are derived is very carefully done, however, the results of examination tend to have a questionable meaning, and there is a tendency to assume that mental age is a very accurate and reliable measure. If properly safeguarded, mental age determined upon the Binet individual examination should remain as a court of last appeal in the diagnosis of difficult cases.

The *percentile score* is coming to have rather common use. It is based on a simple principle, namely, the determination of the rank of a pupil with respect to one hundred unselected typical cases of his own age or grade, arranged in order of excellence. The fiftieth percentile score is the median score, while the seventy-fifth percentile score is exceeded by only the best one-fourth of the entire group. In this manner it may be stated that a pupil whose percentile score was among the lowest two percent of his group would be found exceedingly backward. The percentile plan has been sponsored chiefly by Rudolph Pintner⁷ and by W. S. Miller⁸ in his "Mental Ability" test. One of the possible defects of the percentile plan is lack of sufficient cases to make the result typical for the group. But this deficiency is also true of other types of distributions. A statement of the number of cases upon which the percentile scores have been computed assists in the reliability of the results. One of the chief advantages of the percentile plan is that the extent of overlapping of scores from one grade to the next or of one age of pupils to the next may be easily determined. For example, a score of 62 points

⁷Rudolph Pintner, *The Mental Survey*. D. Appleton & Co., New York, 1918.

⁸See the Twenty-first Yearbook of this SOCIETY.

on a group intelligence test when referred to the ninth-grade distribution is found to be at the fiftieth percentile, whereas if it is compared to the tenth-grade distribution it is found at the thirty-fifth percentile or possibly as low as the fifth percentile in the twelfth grade. When it is recalled that in many instances group intelligence tests are given to several successive grades with the same condition as to time limits and uniform rules of scoring, the amount of overlapping by grades is reliable and easily computed.

A similar plan with fewer steps is the decile plan. As the term suggests, the distribution is divided into ten parts instead of one hundred. A pupil whose score falls in the first decile stands among the lower ten percent of his group, while one who is in the tenth decile is among the best ten percent. Extensive use of the decile plan is made by the Institute of Educational Research at Teachers College, upon its "Vocational Report" card. The pupil receives a decile rating upon intelligence, attendance, achievement, mechanical or clerical aptitude, etc. In this manner a rather complete picture of the pupil's abilities and disabilities is furnished.

The letter-rating plan adopted for intelligence test scores in the United States Army is similar to the decile plan. It includes certain percentages of cases under the various letters. Thus a rating of "A" includes about 4 percent of the very best in intelligence, a rating of "B" includes the next 8 percent, etc., as reported in Table II. This plan has been adopted for reporting to schools results of group intelligence tests in many programs of testing. The actual percentages of the various groups falling within the letter ratings used in the Detroit public schools are as follows: "A", 8 percent; "B", 12 percent; "C +", 18 percent; "C", 24 percent; "C —", 18 percent; "D", 12 percent; and "E", 8 percent. This classification is based upon the distribution by chronological age regardless of grade placement. Thus all the nine-year-old pupils are placed in one letter distribution of "A", "B", etc., so that a very young pupil may be so far accelerated in his grade placement as to receive only fair school marks and yet be among the very brightest of his own age group who are one or more grades behind him in school. However, by referring his actual score to the distribution of pupils of his own age some adjustment may be made. It is hoped

that eventually courses of study will be so arranged that all pupils will tend to progress through the grades year by year regularly and serious chronological age misplacement will tend to disappear. One of the chief advantages of the letter-rating plan is the simplicity of the principle involved. A pupil rated "A" stands among the highest 8 percent of his own age group in intelligence.

Other types of rating, known as the "T", "G", "C", "B", and "F" scores have been devised by McCall.⁹ The "T" score is based upon the distribution of unselected twelve-year-old pupils. This arrangement is made with the knowledge that the very poorest of twelve-year-old pupils scarcely exceeds in score the average score of the six-year-old group, and the best twelve-year-old pupil approaches very closely the average score for pupils in the twelfth grade. The "T" score has as its unit of measurement one-tenth of the standard deviation of unselected twelve-year-old pupils. Pupils of all other ages are referred to this one scale which is intended to cover all ages. Thus a pupil with a "T" score of 50 on any test would equal the average of the twelve-year-old group and yet he might be only eight years of age. He would be quite superior to the eight-year-old group. A chief advantage of the "T" score is that it may be compared directly to the scores of pupils of any age. Since the scale covers a very long range of achievement its units of measure are not finely calibrated, and the differences between the performances of seven-year-old pupils are not well contrasted with each other. However, the simplicity of the principle probably outweighs its disadvantages and the idea of the "T" score is well conceived.

When it is desired that the "T" score indicate automatically the grade status attained, the "T" score is converted in a "G" score by means of a table provided. Thus a pupil may be rated as third grade in arithmetic ($G_a = 3.0$), half way through the second grade in intelligence ($G_i = 2.5$), and four-tenths of the way through the first grade in reading ($G_r = 0.4$).

Before the "G" scores may be used as a guide for the immediate classification, or re-classification of pupils into appropriate grades, account must be taken of the time of year when the test is given. By the addition or subtraction of certain constants, depending upon

⁹*How to Measure in Education.* New York, 1922.

the month in which the test was given, "G" scores are converted into "C" scores, which indicate automatically the immediate proper classification. Thus Ga, Gi, and Gr may be converted into Ca, Ci, and Cr, respectively.

The function of "B" scores is to measure brightness, to indicate the pupils' past rate of development, and to prophesy the future. Bi measures the same sort of thing as does the Intelligence Quotient. Bi, Ba, and Br are determined by the addition or subtraction of a constant depending on the age of the pupil to or from Ti, Ta, and Tr, respectively.

"G" and "C" scores show how well the pupil is doing for the grade he is in. The "B" score shows how well he is doing relative to his age. There is needed another score that shows how well he is doing for his intelligence. It often happens that a pupil is exceeding what we expect of him in view of his grade and age and yet failing to achieve what we expect of him in view of his intelligence. The Fr score measures the extent to which the pupil's reading ability falls below or exceeds his intelligence. Fr is computed thus:

$$Fr = Tr - Ti + 50.$$

In like manner, "F" scores may be computed for arithmetic, spelling, or other subjects, or for all subjects combined.

It will be noted from the various types of ratings proposed that there is a tendency to express scores in very simple terms with which the teacher is familiar. There is also a tendency to express results in approximate, rather than in exact terms. Such approximation assumes that the teacher will still have a problem in studying her pupils and she will not rely merely upon the test results alone. She will be *assisted* by the various tests in making her final decisions more reliable.

Many types of graphs, or profiles, have been suggested so that the teacher may have a picture of test results. For example, suppose the percentile scores of a pupil in several tests have been determined. On a two-dimension graph the percentiles from one to one hundred may be laid off on the horizontal axis. On the vertical axis at convenient intervals the various tests may be placed. Suppose then that a pupil stands at the eighty-fifth percentile on a

group intelligence test. A check, or appropriate marking, will be made at the point where the eighty-fifth percentile line and the group intelligence test line intersect. A check may be placed conveniently to show the fortieth percentile in spelling, etc. These points may then be simply connected by lines so that the teacher may determine at a glance in just what points the pupil in question is weak or strong. This plan may be used for all types of ratings and for any kind of trait which is susceptible of measurement. Final judgment on the use of scientific measurement in educational and vocational guidance will be based, not upon the volume of testing but upon the intelligence shown in presenting results of measurement in simple but effective form.

PERMANENT AND CUMULATIVE RECORDS

A hasty survey of the record cards adopted by many of the larger school systems quickly convinces us that the present methods of preserving records leave much to be desired. It is the writer's belief that the present systems of records are entirely inadequate and are seldom cumulative in character. This belief is substantiated wherever a thorough analysis of pupils has been undertaken. There should be available a complete family and personal history of the pupil which will sketch for us his home environment. All the chief activities in and out of school should be recorded as often as once a year. In addition to these events, significant incidents in the pupil's life should be noted. It is not easy to explain the present dearth of information upon record cards. It may possibly be due to a faulty conception that the teacher should receive new pupils every term with an absolutely clear record, and then discover their weaknesses anew. One wonders just how much difference it would make in the careers of pupils if teachers had advance information of idiosyncrasies and hints as to how to meet and cope with them. The old plan suggests a punitive, rather than a corrective type of instruction. Knowledge of defects and recognition of needs are part of modern educational philosophy. The lesson should be clear without further elaboration. We do not find out much about pupils in a day, nor in a week, nor sometimes in a year. Wise educational and vocational guidance must rest upon full knowledge of the

pupil's past, his present, and his probable career. If guidance accomplished no more than the production of adequate records, its existence could be justified upon that count alone.

SUMMARY

Educational guidance and vocational guidance are appearing upon the educational field at a time when education itself is undergoing significant changes. The forces which are behind reforms in education, while motivated by single ideas, spread their influence far and wide into unsuspected channels. Guidance is based on a philosophy of greater industrial efficiency and happier social welfare. In order to attain this goal, guidance must go behind its final stages and demand education fitted and adapted to the needs and capacities of the pupils. It touches all the factors which constitute education.

In presenting measurement in educational and vocational guidance the writer has dealt in part with measurement in other fields and shown how the methods adopted there may be of value when taken on in the guidance program. These considerations were grouped around the topics which are recapitulated here:

1. Measurement has been attempted successfully in many educational activities, though only mental measurement has been stressed in this chapter. Mental measurement has an important message for guidance in that it is pointing the way to the classification of pupils for instructional purposes upon a more efficient basis. It selects pupils who are potentially dull and prescribes a type of curriculum which leads them toward life activities for which they are best fitted. Mental measurement selects the bright pupil, suggests his program, and attempts to conserve his valuable talent for the highest types of production.

2. Mental measurement has been attempted in the fields of industry through examinations conducted in the United States Army and in industry since the war. The findings merely tend to verify the program of intelligence examination which have been undertaken with school children. The discussion has shown a general relationship existing between intelligence and occupations. It has pointed out how intelligence acts as a selective factor within any

occupation and the futility of expecting to train workers and hold them in a given trade unless their abilities are fairly well fitted to the task at hand.

3. The use of mental measurement in education has pointed the way to better methods of coping with the problems of correct guidance for all pupils. It has helped to define the significant factors which affect a pupil's progress. It will isolate and precipitate for study, traits of character manifested by certain types of pupils. In this manner social maladjustments which play havoc with human relationships will be reached and possibly cured.

4. The use of mental measurement in industry offers many puzzling and contradictory dilemmas, which can be explained satisfactorily only by taking into account all the factors which affect human behavior. In time we shall analyze these situations and offer solutions. In fact, we shall anticipate them and they will disappear before they arise. One of the most obvious values of the intelligence test is to show the upper and lower 'safety limits' by which a pupil may be guided into, or away from, a given occupation.

5. The measurement of traits of character, and the aptitudes for various occupations is following rapidly upon the intelligence test. When the effect of intelligence is recognized and accounted for, the importance of other traits can be more easily studied. When the measurement of these other factors has been made and results evaluated, some of the blame for failure will be taken from the shoulders of the intelligence test and placed where it properly belongs.

6. The success of measurement in educational and vocational guidance will depend in large part upon the manner in which it sells its wares to the individuals responsible for education in general and for guidance in particular. Various types of ratings and various methods of presenting data have been discussed. In general it may be said that there is a healthy tendency toward simplicity of terms and expressions of measurement which is very hopeful.

7. Finally, the entire movement for guidance should be based upon a full and comprehensive system of records which acquaint us thoroughly with the pupil from early childhood. We get a

picture of him growing up, of him progressing through his school work, of him trying out his talents in a few lines in which he is most likely to succeed. This aspect of education is certain to be so important in the future that a satisfactory chapter can scarcely be written upon it now in our present stage of ignorance and inadequacy.

Guidance has arrived on the scene at a favorable and opportune time. It can take advantage of many new movements which will assist it, and which it, in turn, can assist. Its ultimate success will depend upon the ability of its leaders to organize the various forces for a unified and intelligent program for every pupil.

CHAPTER IX

PREPARATION FOR THE WORK OF VOCATIONAL COUNSELLING

A. INTRODUCTORY

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The reader of the preceding chapters will have observed the great diversity of effort in the field of vocational guidance and the need for co-ordination among these several activities. No force is more important in the accomplishment of this co-ordination than the effective preparation of teachers and others to do work in the various departments of vocational guidance. If the children in school are to have adequate practical contacts with industrial, commercial, and professional enterprises, they must have opportunity to try samples of occupational life under the direction of versatile teachers. The ordinary teacher of manual training will need to get a new point of view, if he is to do this work effectively. Again, teachers of occupational information must be prepared. Next, ability to counsel children must be developed. Obviously, too, this counselling will require ability to test, or at least to use intelligently the results of tests administered by other persons. In the fourth place, teachers must be prepared to give the necessary guidance during the pursuit of vocational courses. Fifth, placements must be made; workers must be trained to know how to handle effectively the work of making the necessary contacts with industry and inducting children into positions suitable to them. Sixth, there must be developed ability to 'follow up,' to suggest advanced study, and to prepare and guide the worker in the long process of re-adjustment and promotion. Throughout all these steps, too, as represented by actual skills, there is needed a background of related knowledge in psychology, economics, sociology, education, and vocational education, and a broad but definite knowledge of the kinds of schools in which one is likely to work.

Further, social understanding of the philosophy of one's work cannot always be assumed and must at least be placed squarely before the student of vocational guidance in connection with the courses he pursues. Finally, the ability to do constructive research, and skill in dealing with school administrators and the public in connection with one's work are further necessities.

There are presented in this chapter descriptions of vocational training courses in four institutions: Columbia University, the University of Michigan, Harvard University and the University of Chicago. No claim is made that these present a comprehensive or accurate picture, but only that they seem to be the ones most available for our purposes. The third paper, prepared by the present writer, was written before he had read the other plans. There are, therefore, four independent accounts. It is interesting to compare them.

The reader will note, in the first place, the emphasis on actual practice in all four papers, and, again, the common difficulty expressed in providing this practice work. He will note also, as emphasized particularly in Professor Bonser's paper, the fact that the work of the counselor is hardly at this time a definite professional position. Indeed, just now there is call for some educational statesmanship in studying the problem suggested by Professor Bonser, namely, the work of deans of women, officers, vice-principals, and others, to determine just what, after all, is the center of these activities. One interested in educational and vocational guidance will probably believe that success in school progress is the center about which should be placed other forms of guidance, and that since this task of school progress is the common full-time job for students, so the common full-time job of the worker later—namely, his vocation—should be the center about which are grouped the guidance in other activities. Professor Bonser is quite right in saying that deans of women, as a class, have not yet recognized the possibilities in the vocational counselling phases of their work.

Professor Myers very directly points out the double task which a university teacher of vocational guidance has before him: first, to prepare the school principals and superintendents for understanding and fostering vocational guidance; and second, to train

counsellors. Further cause of complexity is suggested by the whole problem of classifying students in schools. There are at the present time some high schools which turn over completely all problems of choice of studies, courses, testing, and other classification questions to the vocational counsellor for the school.

B. THE TRAINING OF VOCATIONAL COUNSELLORS AT TEACHERS COLLEGE, COLUMBIA UNIVERSITY

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At Teachers College there are numerous courses which contribute to the preparation for vocational counselling in the high schools. However, there has not been developed what we call a "major" in this field—an organized group of studies designed specifically to prepare students for work as vocational counsellors. There have been very few demands for men and women to do this work alone. In most high schools the work has been done by one or more teachers who are released from one or more periods of teaching to give part time to counselling. The work has therefore usually been an adjunct to a teaching position rather than as an independent position in itself.

Teachers College has a considerable number of women students who are definitely preparing to become advisers of girls and women in high schools, normal schools, and colleges. The demand for these is increasing at a rapid rate. Vocational counselling is only one of the problems of the advisers of girls and women, but it is a very important phase of their work in high-school positions. Relative to its importance, it has not yet been given adequate attention.

Superintendents, principals of schools, and, also, directors of educational measurements and research are interested in the problems of counselling, although they find time for only the more general aspects of the problem rather than for details of technique. All general courses for these positions of administration, supervision, or research provide some opportunity for acquaintance with the problem through short unit courses or through a few hours devoted to the consideration of its present status, its literature, and the direction and tendencies of its development.

For those directly interested in preparation for the work, either in addition to teaching responsibilities or for full-time positions, courses are available which offer practically every phase of needed preparation, save only adequate practice in actually engaging in the counselling of students. As the work develops, it is expected that

wider opportunities for practice will be provided by the co-operation of neighboring schools. Courses offered which embrace material directly representing the essential content of needed preparation include the following:

- (1) The problems and methods of vocational guidance;
- (2) Analyses of occupations to provide both vocational information and training in the methods of securing such information;
- (3) Field studies and research in special phases of vocational education and guidance;
- (4) Making and applying mental and vocational measurements and tests, and the treatment of results;
- (5) The sociological and psychological foundations of vocational education and guidance;
- (6) The theory and principles of vocational guidance;
- (7) Principles of practical arts education;
- (8) The education of women;
- (9) Problems of advisers of girls and women.

In addition to these lines of work, there are numerous courses, both general and specialized, in economics, sociology, psychology, and education, all open to any student who is prepared to take them.

So much for the present situation at Teachers College. Speaking more generally, it may be pointed out that the needs of the students who are to be counselled, and the conditions under which and in relationship to which the counselling must be practiced to be effective determine, of course, the kinds and amount of preparation required of the counsellor. Since the problem is here considered in relationship to secondary schools as they are, it is important that the counsellor should understand well the organization and the possibilities of those schools in which he is to work. For counsellors in these schools a knowledge of the organization, courses, and methods of administration of courses and programs in both junior and senior divisions of the high school is quite essential. Familiarity also with community opportunities, both for training through special schools or by apprenticeship plans, and for work suited to various kinds of capacities and other personal qualities is necessary for practical efficiency. Preparation should provide training in quickly interpreting the conditions of the schools themselves, and in securing with little delay needed community information in detail.

Having these essential elements of knowledge of his schools and his community, the counsellor's direct work with students will require an efficiency in interpreting the school records of individual pupils, their capacities, and other personal qualities as revealed by tests and personal data, and by their economic and social backgrounds and outlooks. He will be required to resolve all of these factors into conclusions in which each element receives its appropriate consideration, and then offer advice which it seems reasonably probable that the student may be able to follow.

Such preparation involves not only specific information and training in these constituent activities, but also a working knowledge of a broad background of economics, sociology, and psychology. The position of the counsellor is one of far-reaching responsibility and one that requires breadth of vision, knowledge of conditions and people, and skill in the application of his knowledge to the widely differing needs of individual cases. While the counsellor may work in accordance with well-formulated general principles, every individual problem presents a combination of factors unique in one or more particulars.

At present, the position of counsellor is without standards, either in exact definition or function. Our endeavor shall be to take account of the many experimental attempts to develop the position, compare their methods and outcomes, and through an evaluation of the merits of the respective methods attempt to devise an organized body of principles and practice from the use of which measureably effective results may be depended upon. Together with this utilization of the experience of those attempting the work by various methods, we are establishing co-operative relationships with neighboring junior and senior high schools where experimental and practice work may be carried forward. From these sources and from the application of principles which fundamentally underlie the problem, we shall plan a specific array of courses by which the education and training of the counsellor can be accomplished. When we have reached a point at which we may say with confidence that one has been prepared for this work as adequately as we prepare school superintendents, high-school principals, elementary-school principals or supervisors, or directors of educational measurements,

we shall offer a diploma for the position of vocational counsellor. For the worker of this kind in the high schools, in as much as the responsibility is for advice that is educational as well as vocational in many cases, it is quite probable that the title will be that of educational and vocational counsellor.

The time seems ripe for an integration of the successful trials and experiments made in various sections of the country during the past decade. From the experimental stage of the work, we look with confidence to the early emergence of a body of fundamental principles and practice which will serve as a guide to the preparation of counsellors with a minimum of waste and an increasing efficiency through the refinement and perfection of technique.

C. THE TRAINING OF VOCATIONAL COUNSELLORS AT THE UNIVERSITY OF MICHIGAN

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In discussing the question of training vocational counsellors it must be recognized that, while the demand for well prepared counsellors is increasing each year, at present the number of persons required for full-time counselling positions is not large. There is much popular interest in the subject, but school authorities have not yet provided for it extensively in school budgets. On the other hand, the need for acquainting superintendents of schools, principals of junior and senior high schools, high-school teachers, and others with the responsibility and opportunity of helping youth to make wise occupational choices is almost unlimited. We have, then, the double problem of acquainting a large number of people with the aims, the opportunities, and to some extent the methods, of vocational guidance, and of selecting and training intensively a small, but growing number of specialists who will devote their entire time to vocational counselling.

Our concern in this discussion is with the latter group, but it would be a mistake to lose sight of the fact that the success of this group will depend to a large degree upon the extent to which the former group develops a sympathetic and intelligent attitude towards vocational counselling. It would be a mistake, also, to lose sight of the fact that many high-school principals and teachers will continue to do valuable work in this field after the trained counsellor has become as much a part of the high-school organization as is the trained teacher of English or history.

The work done at the University of Michigan in training vocational counsellors divides itself readily into five parts: First, an introductory course or survey; second, a study of special problems; third, a combination of class work and field work in which information concerning occupations is gathered and prepared for use in counselling; fourth, seminar courses in which each student makes an investigation of some aspect of vocational guidance (sometimes two or three students work together on the study); and, fifth, related

courses in economics, sociology, psychology, and education. To this list it is planned to add practice work in counselling under supervision and also the requirement that the student shall have had industrial or business experience.

The introductory course seeks to give to a considerable number, who will be responsible for high-school work, a general knowledge of the purposes, organization, and methods of a comprehensive guidance program. It serves, also, as a means of sorting out from this number the few who have the qualifications and the interest necessary for success as counsellors. Present methods of entering occupations, as shown by numerous studies of young workers, are considered. The social and economic waste involved is discussed. Society's responsibility in the matter, and the school's place in meeting this responsibility are next considered. Trial, or exploratory, courses, occupational information courses, individual counselling, placement, and 'follow-up' are given attention. The organization necessary for effective work, possible aid from other social agencies than the school, and the significance of intelligence and vocational tests for a guidance program also find a place in this course.

Following the introductory course, another course of equal length is offered which deals with particular problems of the counsellor. Some of these problems were considered briefly in the general course. The aim is to acquaint the student rather thoroughly with principles and methods affecting the more important questions involved in counselling, and with current practice in meeting these questions. Among the topics given considerable attention are: Obtaining and using worth-while data concerning occupations; the technique of the interview; using other social agencies than the school; interpreting and using results of general intelligence and other tests; purposes and methods of follow-up work.

The purposes of the combination of class work and field work in gathering and preparing information concerning particular occupations are to give the prospective counsellor contacts with employers and workers, to give him experience under supervision in analyzing occupations for counselling purposes and in writing up the results of his analysis, and to supply him with first-hand, up-to-date information concerning a limited number of occupations. No purely

theoretical course on occupational information nor one based upon studies made by others can possibly take the place of this combination course. Every successful counsellor will find it necessary to study systematically the occupations of his own community and should be prepared to do this work. Some of the material worked out in the University of Michigan course will be found in "Opportunities and Requirements in Local Occupations," Parts 1, 2, and 3, published by the Board of Education of Detroit. When this material was prepared, the course was conducted by Mr. A. H. Edgerton, who was then chief of the vocational information and counselling division of the vocational bureau of the Detroit school system, and who was concerned with training a group of counsellors for the intermediate schools, high schools, continuation schools, and special classes of that city.

The seminar courses provide opportunity for advanced students to investigate special problems and try out special methods in vocational guidance. The problem of each student is determined by his particular interest. Reports of plans and of work done are submitted to the group by each member from time to time for criticism. Individual conferences between instructors and students are frequent. One of these investigations, "Occupations of Junior Workers in Detroit," a study of 1500 continuation-school boys and girls from the young workers point of view, by Alexander G. Crockett and Jennie M. Clow, has been published as a bulletin by the Vocational Education Department of the University.

Of course, each student preparing for the work of counsellor is expected to have a good general knowledge of economics and sociology, including such special courses as labor problems, employment management, and community problems. He is expected also to be sufficiently acquainted with general psychology, vocational psychology, educational psychology, and intelligence testing to be able to apply their principles when desirable, and to weigh intelligently their results in so far as these affect vocational counselling. Some training in the principles of education and in the problems of the high school and junior high school are likewise considered essential.

While the foregoing completes the present training program for counsellors at the University of Michigan, a plan is now under consideration for providing practice work in the University High School, which will open next September, and in city school systems of southeastern Michigan. Such practice work in counselling would be provided for on an apprentice basis, each student-counsellor serving in this capacity with a practical counsellor for a definite period of time. Also, the proposal is under consideration to require each would-be counsellor to have, before completing his training, at least three months' experience as a worker in industry or business.

D. THE TRAINING OF VOCATIONAL COUNSELLORS IN THE GRADUATE SCHOOL OF EDUCATION, HARVARD UNIVERSITY

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The Graduate School of Education of Harvard University is a vocational school and our first consideration, therefore, is a survey of the needs of those who enroll in classes in vocational guidance. Two facts must be borne in mind: first, that over 80 percent of the full-time students in the School of Education are teachers of experience; and second, that many are definitely planning for promotion, so that knowledge of, and ability in, counselling is itself likely to be used as a stepping-stone to positions in college teaching or to work of an administrative character.

Records are available for 162 students of recent classes in the general course in "The Principles of Vocational Guidance," in which these students described their present work and their immediate objective as well as later goals. Sixty-two of the 162 have no immediate desire to change their work, while 100 have in mind promotion to various other positions. Following is a tabulation under the two heads:

	Number Having This Work as Present Job	Number Choosing This Work as Next Objective
Teachers in Schools	71	37
Vocational Counsellors (Including Personnel Workers)	10	34
School Psychologists (Including Directors)	4	8
Librarians	2	0
Students and Miscellaneous Other Occupations	18	0
Supervisors, Heads of Departments, Directors, Vice-Principals, etc.	21	16
Principals of Schools	18	33
Superintendents of Schools	6	23
College Teachers	12	11

It will be noted that those aiming to be counsellors and psychologists together total but 42, school and college teachers 48, and supervisors, principals, and superintendents 72.

The comprehensive survey in the first course is by no means "general" in the sense of indefinite. We hope that the applications

to classroom and counsellng procedure are specific in every lesson and on every point touched. This course seems to us to contain considerations which need study by all the groups represented in the figures above.

Class procedure involves chiefly lecturing, as we believe the lecture method is practicable for students experienced in the fields under discussion or in school work of various kinds. Lectures are subject to frequent interruption for purposes of question, disagreement, and discussion. Sometimes brief compact tests are given on the lectures and the reading. A definite attempt is made to check up the reading by means of questions. In all such matters of class management we believe that a university class needs the same careful attention as do classes of pupils in schools. Frequent reactions to the lectures and readings are required, in the shape of ten or more outside exercises, examined and revised enough to be fairly good in construction, and brief enough for the concise handling of a single problem. A mimeographed page listing the readings and other assignments is distributed, together with a seating list for identification and acquaintance. A syllabus, or outline, and certain other papers containing illustrative matter pertaining to the course are also distributed.

Advanced courses during the regular year are given as follows: First, there is a course in "Counselling and the Organization of Guidance." This course obviously should be organized in two parts. That seems impracticable at the present time. Logically, the organizers of vocational guidance work in schools need to know the problems of counselling, and counsellors need to know organization. At any rate, the members of this class are likely to be very much better selected than those of the class in Principles. For this reason it is recommended that the course in Principles be taken first, though this is not a required prerequisite. Second, we have a "Seminary in Vocational Guidance" for the study of individually selected problems, with class discussions on progress. About one-third of this class is likely to be engaged in writing doctors' theses, and another third or a half will be composed of part-time students who are carrying out a study in connection with their present work. During the year 1923-4 the class is studying the problem of measure-

ment in educational and vocational guidance. Third, individual research without class meetings may be carried on by those who are competent.

There is also offered a course called "Education as Guidance," in which some of the lessons learned in vocational guidance are applied to school progress, home membership, citizenship, care of the person, leisure, ethical attitude, co-operation, etc.

In the Summer School additional courses are likely to be offered in "Psychological Methods in Vocational Guidance" and in "Occupational Information, Research, and Surveys."

Co-operation with other fields of work in the school is common, and special lectures on guidance are given in the course for the training of school superintendents. An attempt is made to treat vocational guidance as the logical method of articulation between vocational education and general education.

In connection with all classes an attempt is made to furnish some sort of a balance among skills in, technical knowledge of, and social understanding of the work of vocational guidance. Naturally, every college class leans toward the last two named, but wherever it is practicable, students are given some sort of trial, or brief experience, in the various fields of vocational guidance activity. In addition to visits to industrial and commercial establishments, actual cases are brought into class, and students are assigned to the task of conducting lessons in occupational information, in counselling individuals, and in other skills. The work of placement is largely neglected, though beginnings have been made in this direction. The last class in counselling studied eight cases of individuals needing help. Several important constructive pieces of work were done by the members of this class. One of these involved a reconciliation at home and additional education for a talented boy who had run away and been brought back, supposedly to leave school and go to work.

In the files of the Bureau of Vocational Guidance at Harvard University it appears that some thirty individuals and as many institutions have offered courses in Vocational Guidance. No doubt there are fully thirty other places about which we do not know. The importance of co-ordinating the various efforts in this direction is evident.

E. THE TRAINING OF VOCATIONAL COUNSELLORS AT THE UNIVERSITY OF CHICAGO

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At the University of Chicago work is offered in guidance and personnel training through a number of courses dealing with the general background of educational principles and practice, the special training of workers for guidance and placement, and the pursuit of research work in the guidance and employment field.

A course in "Occupational Information, Guidance, and Placement" is intended as a survey type of treatment for school officers generally. In this course we attempt to present the problems in such a way as to show teachers, principals, superintendents, supervisors, and others their peculiar responsibility for personnel service. In a course in "Occupational Counselling," there is an attempt to assist those who desire to devote special attention to the advisement or placement side of the work, to evaluate occupational survey, or informational material. There is also an attempt to train in a very limited way in the technique of interviewing and group discussion of personnel matters.

In a course in "Research Problems in Occupational Information, Guidance, and Placement," we attempt to afford an opportunity for individual, and for the most part, independent research in the field of personnel service. While this course requires regular class meetings and formal discussion of a number of problems before the entire group, there is really little excuse for such administration, and it is evident that the group would profit equally if the course were to be administered on the seminar plan.

While we are interested in providing for the advanced training of a number of specialists for service in the various branches of personnel work, we are equally concerned with the problem of impressing the rank and file of the school teaching and administrative force with the need of more complete service in matters bearing upon personal adjustment, both in school and out in employment. After all, the service of specialists can never be effective until our teachers and administrators generally accept the program, and

accept, along with the program, some responsibility for its effective administration at the point where they come in contact with the young people concerned.

The courses I have indicated represent the work we attempt on the University campus. In addition, the course on "Occupational Information, Guidance, and Placement" is offered by correspondence. Each year we reach in this fashion probably twenty-five to thirty mature teachers or administrative officers in public schools, normal schools, and colleges. The materials prepared for correspondence study are now being extended, and it is expected that a printed volume will soon make possible more effective treatment of this matter for non-resident students. This course and that in "Occupational Counselling" are also offered through University College for the benefit of students in and around Chicago. One of these courses offered in Joliet this autumn has an enrollment of seventy students, mostly teachers from the Joliet High School and Junior College. As the study progresses they are canvassing the possibility and desirability for rather complete reorganization of the personnel work of the entire school. The course is conducted on the graduate level, and more than half of the students enrolled have their masters' degrees. This work represents what, in my estimation, must be done in a number of centers before we progress much with the major problem ahead. We have a number of calls for similar service, but staff limitations interfere with immediate development.

We have as yet done little to bring together the various departments in the University that deal directly with this problem of personnel. The future holds an opportunity to bring together courses now scheduled in various departments, such as those in certain phases of administration and measurements in education, personnel courses from the School of Commerce, employment psychology, and tests for special ability from the Department of Psychology, case work from the Department of Social Service Administration, and other similar independent units of work from the various divisions of the University. These, knitted together and slightly modified, afford the basis for the kind of specialized training needed by many of our advanced students. Coupled to this

kind of training must be the practice now going forward in our laboratory schools and through the offices having to do with the student body generally.

On the whole, there is most encouraging interest on the part of school representatives in this matter of personnel administration in schools, and if the larger institutions go forward with provision for the right kind of leadership, the movement will make rapid progress. This progress should be not alone in terms of training or providing for an over-large number of highly specialized workers, but it should be progress in terms of general recognition on the part of all school officers of the importance and necessity for more adequate treatment of things personal and human, as well as of matters largely intellectual.

CHAPTER X

A SELECTED BIBLIOGRAPHY OF EDUCATIONAL AND VOCATIONAL GUIDANCE

R. B. CUNLIFFE

Vocational Bureau, College of the City of Detroit, Detroit, Michigan

PUBLISHERS' DIRECTORY

- Abingdon—Abingdon Press, New York City.
Allyn—Allyn and Bacon, Boston, Mass.
Am. Book—American Book Co., 100 Washington Square, New York City.
Am. School—American School, Chicago, Ill.
Am. Tech.—American Technical Society, Drexel and 58th Ave., Chicago, Ill.
Appleton—D. Appleton and Co., 29-35 W. 32nd St., New York City.
Association—Association Press, 347 Madison Ave., New York City.
Atlantic—The Atlantic Monthly Press, Boston, Mass.
Badger—Richard G. Badger, Boston, Mass.
Barnes—A. S. Barnes Co., New York City.
Blakiston—F. Blakiston's Son and Co., Philadelphia, Pa.
Bobbs-Merrill—Bobbs-Merrill Co., University Square, Indianapolis, Ind.
Bruce—Bruce Publishing Company, Milwaukee, Wis.
B. V. G.—Bureau of Vocational Guidance, Harvard University.
Century—Century Co., 353 4th Avenue, New York City.
Cleveland—Cleveland Education Survey, Cleveland, Foundation.
Crowell—Thomas Y. Crowell Co., New York City.
Doubleday—Doubleday, Page and Co., Garden City, New York.
Forbes—Forbes and Co., 443 S. Dearborn St., Chicago, Ill.
Franklin—Franklin Publishing and Supply Co., Philadelphia, Pa.
Ginn—Ginn and Co., Boston, Mass.
Harper—Harper and Bros., Franklin Square, New York City.
Harvard—Harvard University Press, Cambridge, Mass.
Heath—D. C. Heath and Co., 110-120 Boylston St., Boston, Mass.
Holt—Henry Holt and Co., 19 W. 44th St., New York City.
Houghton—Houghton, Mifflin Co., 4 Park St., Boston, Mass.
Jones—Guy M. Jones Co., Indianapolis, Ind.
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Little—Little, Brown and Co., Boston, Mass.
Longmans—Longmans, Green and Co., 443-449 4th Ave., New York City.
McClurg—A. C. McClurg and Co., 330-352 E. Ohio St., Chicago, Ill.
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SECTION II
VOCATIONAL EDUCATION FOR THE
INDUSTRIES

CHAPTER I

OUTSTANDING TENDENCIES IN INDUSTRIAL AND PART-TIME EDUCATION PROGRAMS IN ONE HUNDRED FORTY-THREE CITIES

A. H. EDGERTON

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Much has been said and written concerning the place of vocational education in democratic public school systems. Both constructive and destructive criticisms have been repeatedly directed toward all vocational education activities, and especially those which fail to reflect the important changes, demands, and interests of representative pursuits in occupational life. The rapid developments in this recently organized movement for vocational instruction throughout the country and the corresponding diversity of practices in the various local communities have necessarily resulted in a considerable amount of confusion and misunderstanding.

Despite these challenging facts, increasing numbers of the most progressive school organizations surveyed in 143 cities are attempting to meet current and changing demands for purposeful instruction and systematic advisement. To be sure, these schools usually have administrators and teachers who possess insight and vision sufficient to provide adequate instructional and guidance facilities, both as a definite preparation for profitable employment and for general educational values. In both connections, it is encouraging to note that marked increases in interest and in ambition, and likewise in school attendance, usually follow the inauguration or reorganization of courses of study which actually attempt to meet the needs and capacities of the learners in question. As will be indicated, many of these school systems have realized notable improvements by being less occupied with their earlier attempts to justify established courses of study and arbitrary methods of procedure,

and by becoming more alive to the urgent need for extending school service.

DIFFERENT INTERPRETATIONS OF VOCATIONAL EDUCATION

As would be expected, honest differences of opinion as to claim and interpretation have frequently existed among those who are concerned with the important distinctions, meanings, relationships, and functions of vocational education. Debatable issues have been evident to close observers for a number of years, and especially since February, 1917, when certain formulated standards as to general procedure, time, equipment, and qualifications of teachers were established through the enactment of the Smith-Hughes vocational education law. By means of this law a part of the expenses incurred for specified vocational purposes may be reimbursed from Federal funds through the state departments by direction of the Federal Board for Vocational Education. Perhaps much of the misapprehension as to objectives, means, and methods may be attributed to premature interpretations and decisions which have often been based upon erroneous or superficial data.

A notable example of such misinterpretation is to be found in this survey of 143 large and small cities. Those cities having the most successful programs have usually taken the attitude that this Federal law provides a desirable means of stimulation and assistance in developing some adequate facilities to meet their local problems for providing vocational education. Nevertheless, a few communities have decried the restrictions of this law, which they have regarded as an arbitrary means of controlling the local programs. This claim has sometimes resulted from a disinclination on the part of some school representatives to accept entirely the philosophy of certain educational leaders and specialists who would sharply differentiate all problems of vocational education from their alleged relationships with other divisions of education.

Several school officials continue to insist that serious conflicts exist between general education and the controlling objectives and policies for vocational education. In a few cases it is reported that boards of education are little concerned with the immediate problems of preparing more efficient workers in specific occupations.

On the other hand, a few enthusiasts report that they regard the satisfactory solution of problems in vocational education as an absolute and independent preparation for complete living. But, with the few exceptions which will be listed later in these reports, the representatives of the city systems investigated in person, by questionnaire, and by letter do not indulge in either of these extreme points of view. In the main, their educational philosophies assume that the future wage-earner is a consumer and a citizen, as well as a producer; that a program which neglects to help all individuals to consume intelligently and utilize the hours of leisure wisely is decidedly undemocratic. In other words, most school officials are convinced that their opportunities and duties rest in the problem of helping boys and girls to meet new and changing demands for effective service as members of families and of civic and vocational groups. They state, with varying degrees of emphasis, that their respective school systems are seriously endeavoring to use all available resources in preparing children to make proper choices and adjustments, and to help determine their own future careers. To be more exact, over eighty percent of the school systems investigated show evidences that they are providing activities which aim (1) to develop the general capacities as well as specialized interests and aptitudes of the pupil and (2) to prepare him for the varied demands which the future is going to make upon him, in so far as these can be ascertained. However, as will be indicated later, there is a decided range of opinion as to how these general objectives may be accomplished most satisfactorily.

NOTEWORTHY IMPROVEMENTS IN MANY VOCATIONAL COURSES

In a large number of the specific vocational courses investigated it was found that the clear-cut needs of those desirous of preparing themselves for direct entrance into definite occupational pursuits, or of continuing their supplementary training, have resulted in noteworthy improvements. The most important of these closely related instructional provisions, especially in those schools where diagnosis in the form of analysis and investigation has received adequate attention, may be stated briefly as follows:

1. Increased emphasis upon determining well-defined needs and objectives for offering the various units in question;
2. Practical analysis¹ for selecting the particular skills and knowledge which might well be acquired in order to meet these needs and objectives;
3. Greater interest in evaluating these teachable elements for the purpose of weighing values as to the general order and time when each unit might be most effectively taught;
4. More care in planning each unit in terms of the specific needs and standards for the class, group, and individual, and in relation to the other units of instruction;
5. Better procedure for choosing the most suitable methods and devices for presenting the selected units in keeping with the above considerations;
6. Improved attitude toward checking up and testing² the different persons in training to ascertain how fully the instruction has succeeded in realizing the subjective and objective standards.

With comparatively few exceptions, those directly responsible for this specialized instruction have been agreed for some time that their respective trainees must be aided in acquiring a sufficient degree of manipulative skill and related knowledge to increase their technical efficiency. Perhaps to a somewhat less degree, it is being realized, more and more, that *resulting powers in skills, attitude, and appreciations are acquired most advantageously when opportunity is provided for participation in appropriate thought-provoking situations which give due consideration to desirable initiative and self-adjustment in the learners' chosen vocations.*

Then, too, employers are becoming vitally concerned with the perplexing problems which confront them in selecting, 'breaking in,' and upgrading their employees. On the other hand, there are many examples of the increased realization on the part of employers of the urgent need for education, advisement, and co-operation in order to eliminate unnecessary waste in excessive turnover and in other undesirable methods which are inevitable results of their hit-and-miss systems of 'hiring and firing.' In other

¹See Chapter III for detailed statements of different methods used.

²See Chapter VIII for a discussion of measurements in industrial education.

words, more and more *employers are coming to realize that many of their immediate problems pertaining to human relationships are inherently tied up with the instructional and guidance provisions which are being developed in progressive public school systems.*

INDUSTRIAL EMPHASIS AND RELATIONSHIPS IN THREE HUNDRED THREE JUNIOR HIGH SCHOOLS³

During the past few years marked reorganization and development have been noted in intermediate and junior high schools throughout the United States. As a result of this growth, decided changes are found in the purpose, content, and method of the activities now provided both in industrial courses as a means of general education and in classes for limited industrial education. Table I shows that only six of the 303 intermediate and junior high schools investigated report that they consider this limited vocational emphasis of first importance during the junior secondary period. Nevertheless, Pittsburgh, Pennsylvania; Rochester, New York; Detroit, Michigan; and several other cities have provided the so-called industrial curriculum apart from the 'exploration' or 'try-out' courses, in order to give boys *preliminary* training in a few of the important trades. This curriculum, which conforms to the requirements necessary for receiving federal and state aid under the Smith-Hughes law, is usually designed for two main purposes:

1. To meet the needs of boys with mechanical ability who might be better able to profit by industrial work than by the regular school program.
2. To assist those who for various reasons are to remain only a short time in school and who need short, intensive courses of training before entering industry.

Although the practices differ somewhat in these cities, provisions are most often made for machine shop practice, electrical work, automobile repair and garage work, pattern making, printing, and the like. It is reported that these courses are intended to give preliminary training for entrance to the industries, *i. e.*, for immediate jobs as apprentices or 'helpers.' In Detroit, for ex-

³See Chapter I in Section I of this Yearbook for emphasis upon guidance activities in 379 junior secondary schools.

TABLE I.—MAIN REASON GIVEN FOR OFFERING INDUSTRIAL ACTIVITIES AND RELATED STUDIES IN EACH OF 303 INTERMEDIATE AND JUNIOR-HIGH SCHOOLS

Chief Emphasis and Claims	Schools	
	Number	Percent
I. <i>Contributing to the general experience, all-round development, and industrial intelligence.....</i>	118	39
1. Understanding and appreciating economic production in some form;		
2. Gaining respectful attitudes toward the various workers and their work;		
3. Having ability to judge industrial products and do simple repair and construction work, etc.		
II. <i>Aiding in the intelligent selection of industrial occupations without encouraging early choices.....</i>	101	33
1. Trying-out individual inclinations, interests, and capacities for industrial pursuits, through typical experiences;		
2. Making reliable studies of the conditions, demands, and opportunities in related occupations, etc.		
III. <i>Enriching the school experience of the pupils through concrete situations</i>	78	26
1. Having science, mathematics, and other subjects, profit from a better understanding of materials, processes, tools and machines;		
2. Providing for the individual needs of pupils who would not remain for academic education alone;		
3. Helping pupils more wisely to choose future courses in secondary and higher education, etc.		
IV. <i>Preparing for entrance into industrial vocations.....</i>		
1. Extending the try-out activity to meet the preparatory-vocational needs of pupils who find it necessary to leave school with a minimum of preparation;		
2. Offering greater opportunities for commercial experiences in shopwork by co-operating with outside productive plants during the ninth year, etc.		

ample, specialized work in several trades is offered to the extent of fifteen 60-minute periods a week during one year, with a possible maximum of two years for certain individual students.

In general, the students who are interested in these specialized courses are expected and sometimes required to take so-called 'try-out,' or 'finding,' courses in the seventh and eighth grades before they are permitted to specialize to the extent of fifteen periods a week in a course such as this industrial curriculum offers. In a

few cases where sufficient numbers are involved, it is arranged for a part of this training program to be developed in the establishment through part-time co-operative arrangements.

It unquestionably would be both impracticable and undesirable for any school to try to represent so great a variety and number of highly specialized occupational pursuits as are listed for any of our cities of mixed industrial and commercial enterprises in the 1920 Report of the United States Census. The expenditure would be justifiable neither on the basis of educational needs nor of vocational efficiency. Yet our experience during the past few years of experimentation in public school systems has clearly demonstrated that it is possible to offer instruction in selected and organized units of typical industrial pursuits which will result in some degree of understanding and appreciation and give limited insight into the relative conditions, opportunities, and requirements in a number of important occupations, without the danger of over-emphasizing the localized pursuits and the limitations in certain specialized callings.

POSSIBLE PRELIMINARY PREPARATION IN JUNIOR HIGH SCHOOLS

Experience has taught us that the instruction for those who are preparing for direct entrance into industrial pursuits or skilled trades, or are returning for trade extension work, should help them to acquire a high degree of manipulative skill or add to their technical efficiency. The reports likewise show a generally accepted belief that adolescent pupils might well 'explore' to gain some knowledge of a reasonably wide range of typical industrial activities. These diversified courses often provide first-hand information and experience in important aspects of manufacture, transportation, and commerce as a general foundation and to some extent for guidance in their life work. In the former case, the success of the individual depends largely upon skill and knowledge as these relate to quality and quantity production in some form. In the latter case, the adolescent, or so-called 'self-finding,' period seems to demand appreciative insight into a sufficient number and variety of representative experiences to help pupils try, discover, and develop various capacities for achievement. Such growth and accomplish-

ment would preferably include both understanding and doing, as well as management and supervision of industrial work.

Unfortunately, the terminology for these courses lacks general acceptance and universal adoption, consequently certain obvious confusion has resulted because of the different designations used in various school systems. Perhaps Rochester, New York, has provided one of the most elaborate plans for offering these differentiated courses during the junior-high-school period. In the Washington Junior High School,⁴ for example, three types of industrial courses are offered. These are called general try-out, industrial technical, and vocational. The *general try-out course* is for boys in the 7-A grade, since a general requirement in this grade is that every boy shall have one period of shopwork a day. The aim of this work is to give the boy a general idea of what industrial work is like, so that he will be able to make a more intelligent choice of his course when he enters the 8-B grade. This includes home or household mechanics in a number of the schools. The *industrial technical course* fulfills a double purpose. It is both a pre-vocational training period and a general industrial information course. This course is elective for boys in the 8-B grade or above, and it differs from the general, or "foreign language," course only in the fact that one period a day of shopwork is substituted for the foreign language. The boys spend one term in a certain shop and then change to a different shop for the next term, so that at graduation from the Junior-High School they have a definite knowledge of at least five different kinds of industrial work. This course is preparatory for the senior high school or the usual type of four-year high school, and a 'cross-over' may be made to other courses at any stage without loss of time. The aim of the *vocational course* is primarily trade training, but, after completing a two years' course in this department, a boy may enter the Rochester Shop or Trade School and continue his work for three years, at the end of which time he obtains the State Industrial High School Diploma. A boy may enter this course at any time during junior-high-school attendance, provided he is over 14 years of age. Upon entrance, the

⁴Adapted from somewhat detailed report by R. Parkhill, Vocational Coordinator, Rochester, New York.

boy and his parents choose the trade which he wishes to follow. He is then given a ten weeks' intensive try-out period in that particular trade. If he shows ability and, in the judgment of the instructor, will 'make good,' he continues in that kind of work for two years. If, on the other hand, the instructor believes that the boy is unfitted for the particular trade which he has chosen, he is then given another intensive try-out in some other type of work. This try-out scheme is carried on until the boy finds his niche or until it is definitely decided that he is by nature unfitted for industrial trade work. This course varies greatly from the industrial technical one, in that boys do not carry on the junior-high-school work. The day is divided into three hours of shopwork, one hour and a half of bookwork, including English, history, civics, and hygiene, 45 minutes of related shop mathematics, and 45 minutes of related mechanical drawing. It should be understood that the boys in this course are those who intend to drop out of school at 16 or before, and who desire an intensive trade training before going to work. Recently over 70 percent of the boys in this department were beyond the legal age for leaving school, and it is stated that nearly all of them would have left, had they not been receiving some form of trade training.

In the best of these courses for preliminary training purposes, each pupil participates in a reasonable amount of work which stresses the atmosphere and, to some extent, the time element, and accuracy of the commercial plant. Whenever the equipment in the school shop, for example, will not allow boys to do their work by the most practical methods, it is made clear how this would be taken up in the commercial shop and that their work is being carried on in as practicable a manner as possible with the necessarily limited shop facilities. This and other information, relative to the methods used in larger productive industries, is gained through such sources as planned excursions, reliable reading matter, student reports, motion pictures, class discussions, and talks by specialists.

Wherever vocational classes or part-time co-operative courses exist, it usually has proved more satisfactory to carry on as little as possible of the additional productive or highly specialized work in the 'try-out' or 'opportunity' shops of the intermediate school or

the junior high school. At any rate, it is reported that a reasonable number of industrial plants are being visited, first-hand information of the proper type is being made available, and an attempt to make clear the existing relationship between the school activity and the industry represented is undertaken seriously in a comparatively large number of the schools investigated.

CHANGING EMPHASIS IN 85 ALL-DAY INDUSTRIAL COURSES IN VOCATIONAL SCHOOLS AND SENIOR HIGH SCHOOLS

Those who have participated in the slow but certain reorganization of these separate courses for general educational purposes and for certain values in wage-earning preparation, are well aware that these new developments in the seventh, eighth, and ninth grades are gradually forcing the discontinuance of similar objectives and activities on the high-school level, where accepted junior high schools exist. In answer to the challenge, several senior and regular high schools, *aside from separate trade and technical schools*, have arranged specific plans of part-time co-operation through vocational departments for those who expect to enter industrial callings rather than colleges. The questions which were used as a general basis for the preliminary reports concerning the functions of these vocational courses in 85 schools are shown with brief summaries in Table II.

Wherever possible, some cities have attempted through co-operation with the employer, to have the pupil arrange his training program in the form of an apprenticeship agreement. In other words, this is based upon the following generally accepted principles:

1. That wherever possible, all trade training given in the public schools should be in the nature of an apprenticeship leading to the status of a journeyman.
2. That, since it is generally conceded that a school cannot give sufficient training in the skill and speed of manipulation to graduate a student as a full-fledged journeyman, some of this training must be given during employment.
3. That, in order successfully to carry on trade training, the school must secure the co-operation of the parent, the pupil, and

TABLE II

Questions as a Basis for Preliminary Reports on Day Vocational Schools

1. Is it expected that your day vocational school will teach a trade in the fullest sense of the term, or is its purpose mainly to prepare boys and girls over 14 years of age for entrance into the trades?

2. Is it expected that the day school instruction will prepare for intelligent citizenship as well as for superior workmanship?

3. To what extent do your respective courses teach both the actual operations and the theory underlying these operations?

4. What relation exists between the practical shopwork and the related studies in English, mathematics, science, etc.?

5. Is it found desirable to have the shopwork in the day courses always conducted on a commercial basis?

6. Are the units of work assigned pupils in the form of exercises, jobs, or projects?

Brief Summary of 85 Reports

	Over 99 percent of the day vocational courses are preparing young persons for trades with varying degrees of effectiveness. In general little more than preparation for entrance and standing in apprenticeship can be claimed for the instruction of boys and girls under 16 years.
	All believe that their courses for boys and girls provide for the intelligent exercise of duties as citizens, in addition to the preparation for making their homes.
	About 83 percent of these courses provides specifically for instructing pupils as to fundamental principles underlying the shop and laboratory operations.
	Some co-ordination exists in each course investigated, but the most successful relationships were found to be worked out in 38 percent of them.
	Over 96 percent of these courses provide work which is of chief value for instructional purposes but includes much of the commercial emphasis.
	About 93 percent of these courses seem to have emphasized each method as needed in developing the various instructional programs.

employer, and also the journeyman with whom the apprentice must work.

In several cases these schools emphasize related problems in mathematics, drawing, science, and the like, rather than additional shopwork. For the so-called part-time co-operative and technical groups, it is insisted that this related instruction in the principles of applied science, mathematics, drawing, etc., provides for more rapid advancement and higher grades of work in the occupations chosen. In the most successful co-operative plans a well organized and supervised sequence of shopwork is provided in a productive

plant and the co-ordination of shopwork and supplementary school work is of a related and often of vital nature.

Notwithstanding the existence of one or more technical high schools in each of several large cities of 200,000 or more population, it is not uncommon to find some duplication of these centralized courses in other high schools located in the same school systems. Unfortunately, a somewhat similar practice in the overlapping of technical and vocational curricula has caused no little confusion in a few cities which have failed to develop separate courses of study to meet clear-cut objectives for technical education and for industrial wage-earning. For example, more than a dozen schools were found to be providing identical instruction in carpentry, printing, electricity, mechanical drawing, millinery, dressmaking, and the like both for general education values and for advanced trade training, each of which was being sought by a number of pupils enrolled in the same classes.

Despite the care which has been taken by a number of the state departments in setting up standards to meet the Smith-Hughes law as to general objectives, time schedules, qualifications of teachers, and other conditions, there have been occasional tendencies for school officials to change the names of courses which had been designed primarily for general education purposes to include the term "vocational," without materially changing their content and method. Teachers of manual or industrial arts are sometimes reported to have added to this confusion by referring to their courses as "vocational" classes. One teacher and one supervisor even indicated that such a misleading designation has been adopted because it is "more popular" in the communities where their secondary schools are located.

Then, too, although the inauguration of intermediate and junior-high-school organizations has taken place in a large majority of the cities investigated, *practically no changes are claimed in the purpose, work, or method of the industrial subjects in approximately 18 percent of these secondary schools.* It is interesting to note that 95, or slightly over 37 percent, of the 256 high schools in these 143 cities have included promising changes in their upper grade curricula under the name of "senior," "cosmopolitan," or

"comprehensive" high schools. However, it should be stated that nearly twice this number or 71.5 percent of the high schools now provide so-called sequences of industrial courses, which vary widely in their desirability for general education and vocational preparation purposes but do allow limited election of a more or less specialized nature beyond the intermediate or junior high school period.

GENERAL TENDENCIES IN INDUSTRIAL EDUCATION IN 143 CITIES

A more vivid picture of the recent but rapid growth of industrial and part-time education in these 143 representative cities may be had from Diagram I. These graphs show the comparative in-

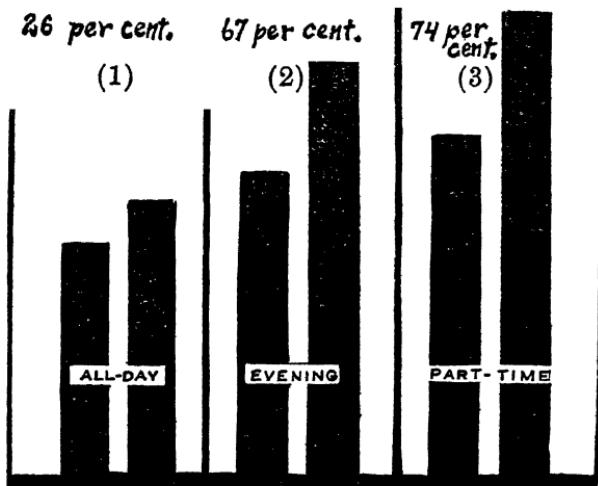


DIAGRAM I. GRAPHS SHOWING PERCENTAGES OF INCREASE OVER PREVIOUS YEAR'S (1921) ENROLLMENT IN ALL-DAY SCHOOLS (1), EVENING SCHOOLS (2), AND PART-TIME SCHOOLS (3), FOR THESE 143 CITY SYSTEMS IN 1922

creases over the previous year's additional growth in enrollment for all-day, evening, and part-time schools. These comparisons with the total increases for each type of school include a period of one year, from 1921 to 1922. It will be observed that the all-day schools (1) have experienced an approximate increase of 26 percent

over the additional enrollment for the previous school year, while the evening schools (2) and part-time schools (3) show the remarkable growth of 67 percent and 74 percent, respectively. Perhaps it should be stated that, while this represents a decided increase in school attendance over the previous year, 1920 in turn had represented by far the largest yearly enrollment for each type of school since the Smith-Hughes law was passed in 1917.

TABLE III. SHOWING THE RELATIVE PROVISIONS FOR PART-TIME, EVENING, AND ALL-DAY SCHOOLS IN THESE 143 CITIES

Type of School	Number of Schools	General Purpose of Work
<i>Part-time schools</i> for persons of compulsory attendance age, who are not enrolled in full-time schools.	178	<i>Adjustment of junior workers through general, industrial, home economics, and commercial education.</i>
<i>Evening schools</i> for persons over 16 and usually over 18 years of age.	108	<i>Advancement of older workers in industrial occupations by means of instruction in shop practice and related technical subjects.</i>
<i>All-day schools*</i> for persons over 14 and often over 16 years of age.	85	<i>Preparatory training for entrance into industrial pursuits.</i>

*These reports include both directed vocational departments in senior high schools and separate vocational or trade schools.

Table III shows the relative provisions which have been made by these 143 cities for part-time, evening, and all-day schools. The 178 part-time schools for persons of compulsory attendance age not enrolled in full-time schools are found to vary widely as to emphasis upon different methods of instruction. However, in general, all agree that they are endeavoring to adjust junior workers through general, industrial, home economics, and commercial education. Likewise, the 108 evening schools for persons over 16 and more often over 18 years of age, are assisting in varying degrees to advance older workers in industrial occupations by means of instruction in shop practice and related technical subjects. Also, the 85 all-day schools for persons over 14 and often over 16 years of age, are attempting to aid those who have elected preparatory training for entrance into industrial pursuits. Table IV shows the

distribution of these part-time, evening, and all-day schools in the twenty-nine states represented.

In the cases of part-time and evening schools, these findings imply that school officials can ill afford to neglect the continued extension of all legitimate forms of educational service which would appreciably assist large numbers of young workers and adults who have definitely left our regular day schools, but who frequently are far too inadequately equipped either as effective workmen or as worthy citizens. Their educational philosophy holds that this is essential, not alone for the protection of the worker's welfare, but

TABLE IV. SHOWING THE NUMBERS OF PART-TIME, EVENING, AND ALL-DAY SCHOOLS LOCATED IN EACH OF TWENTY-NINE STATES FROM WHICH
143 CITY SYSTEMS WERE SELECTED

State	Number of Part-Time Schools	Number of Evening Schools	Number of All-Day Schools
Arkansas	3	2	1
California	16	13	9
Colorado	4	2	2
Connecticut	2	2	0
Georgia	2	2	1
Illinois	11	5	5
Indiana	12	9	7
Iowa	5	2	2
Kansas	2	0	0
Kentucky	1	1	1
Maryland	4	2	2
Massachusetts	7	4	3
Michigan	10	7	6
Minnesota	8	4	4
Mississippi	4	3	3
Missouri	5	3	3
Montana	2	1	0
Nebraska	4	3	2
New Jersey	13	6	5
New York	16	11	8
Ohio	11	9	8
Pennsylvania	13	8	7
Rhode Island	1	0	1
Tennessee	1	0	0
Texas	5	1	0
Washington	3	1	0
Virginia	3	1	2
West Virginia	1	1	0
Wisconsin	9	5	3
Totals	178	108	85

for the protection of society's interests as well; that both are quite largely dependent upon increased individual and collective efficiency in our industrial organization, which, in turn, is inherently tied up with the new and increasing demands upon family and civic relationships.

In the case of the all-day schools there is more or less recognition of the problem of training workers and prospective workers for profitable employment. A few cities have extended this service to include co-operation with industry for the purpose of helping it to prepare its own workers.⁵ The best of these truly vocational courses not only emphasize necessary skill and related technical knowledge, but also stress the much needed independence and self-adjustment in industry by developing thought-provoking situations at every opportunity. Several of these school representatives state that while industrial arts, or the so-called "pre-vocational courses," and strictly vocational courses do aim at entirely different objectives, nevertheless they are closely related in so far as complete programs for industrial education are concerned. In fact, several insist that the success of vocational education depends, to a limited degree, upon the previous acquaintance which its pupils have had with actual conditions in the industrial world, through contact with several distinct kinds of work and study.

Nevertheless, with few exceptions, these school officials are certain that all boards of education should adopt policies for distinguishing clearly between objectives and practices in each type of work represented. They usually express a belief as to the importance of giving mechanical insight and general industrial outlook to workers and prospective workers. In fact, they are now offering general education through vocational departmental supervision for such trainees. They also express the opinion that vocational education is in no way opposed to those industrial courses which are offered mainly as a means of general education. They consider that the specific vocational classes are as truly the finishing schools for the vast army of wage-earners who enter skilled trades,

⁵See Ch. VII, which deals with the most successful attempts to train workers in industry.

as are, for example, the schools of law and medicine for those who have chosen these respective professions.

As will be seen in the following reports on part-time and evening courses, increasing numbers of these schools have recognized that the primary needs for the majority of their pupils from at least 12 to 16 years of age are not merely for high degrees of manipulative skill, but also for reliable information with which to judge occupations in terms of significant demands and changing conditions, and the necessary adjustments involved in these.

FINDINGS IN 178 PART-TIME OR CONTINUATION SCHOOLS

As would be expected, the conditions under which the part-time classes are being conducted in these 178 schools vary considerably as to the nature and quality of instruction provided, the suitability of equipment and materials used, and the adaptability and training of teachers in charge. The questions which were used as a general basis for the preliminary reports dealing with the functions of each school are shown with brief summaries of the reports in Table V.

In general, these statements indicate several encouraging improvements. For example, it is obvious that *the follow-up, or supervision of the young workers in employment, more and more is becoming an integral part of the part-time or continuation school system.* With the gradual extension of the compulsory attendance school laws in several states, the school officials are enlisting the co-operation of state and city agencies in order to be of the greatest assistance to boys and girls who are placed in employment. It is the purpose of the schools, with the assistance of these agencies, to place the children in that type of work for which they are best fitted. Visits are made to children on the job by co-ordinators, and when a child is found to have outgrown his work, another better suited position is found for him if this is feasible.

Then, too, increasing numbers of these schools have arranged, wherever possible, for each boy or girl to have a definite training program, both in school and in employment. In many cities⁶ *courses of study are being gradually revised to conform more nearly*

⁶See Ch. V for reports of what a few of these part-time schools are doing.

TABLE V

Questions as a Basis for Preliminary Reports on Part-Time Courses

1. To what extent do your part-time courses aim to increase the general intelligence of the young workers with the idea of training for citizenship?
2. How much of your part-time instruction is being devoted to helping these junior workers develop industrial intelligence and skill for advancement within their chosen occupations?
3. Where such opportunities for advancement do not exist, are your boys and girls being prepared for some other definite kind of skilled and remunerative work?
4. What types of general improvement courses do you offer to meet the needs of juniors employed in occupations where advancement is almost entirely dependent upon increased civic and general intelligence?
5. Is the work which is being pursued by either boys or girls usually of such a character as will permit of directly related instruction, in so far as strictly industrial subjects are concerned?

Brief Summary of 178 Reports

- | | |
|---|---|
| <p>Over 97 percent of the general continuation, trade extension, and trade preparatory courses provide time for special training in citizenship problems. The actual time devoted ranges from approximately one-eighth to five-eighths of the period (4 to 8 hrs.) of instruction.</p> | <p>Over 91 percent of all part-time courses devote time to instruction for extending occupational opportunities in present work and future plans. The proportion of time given to this instruction varies from one-third to three-fourths of the entire time allowed in different schools.</p> |
| <p>Approximately 46 percent of the part-time schools make specific provisions for training programs and corresponding adjustments in employment. These 85 schools range from those including this as a definite part of their instructional and guidance plans to those having quite incidental arrangements for special cases.</p> | <p>Nearly all of the schools give more or less attention to personal hygiene, recreational activities, current topics, social science, elementary science, mathematics, mechanics, drawing, and the like; but less than one-half of them emphasize elementary problems in economics, industrial relations, and occupational considerations.</p> |
| <p>Nearly all of these schools report direct outcomes of vitally related instruction, but they likewise report limited possibilities for instructional relationships in connection with a large number of occupations represented.</p> | |

to the needs of the junior workers in their daily employment. Closer co-operation is now being secured from employers by a larger percentage of schools. In a small number of cases this is done by informing employers periodically of their employes' progress on training programs, and also relative to other opportunities which the public schools are providing for junior and older workers. *Another notable change is found in the extended guidance and placement service⁷ which makes it possible for each pupil in a number of these schools to become acquainted with employment opportunities before receiving a working permit.* In several cities he also can be advised, before he is placed in employment, of the requirements in the proposed work and the necessary training needed for success in a chosen occupation.

The average age of the pupils in these classes is slightly over fifteen years. In some cities large numbers of old permit workers are being allowed to escape compulsory school attendance. However, the working permits in most cases have been carefully guarded and a fair percentage of these children is to be found in the part-time schools. Most of the permit workers are employed for eight hours a day; in a few cases the working day is more; and in others somewhat less. Only comparatively few employers throughout the twenty-nine states pay the workers while attending school. Although these employers co-operate with, and approve of, the part-time school, they will state that they are not justified in paying the junior workers while they are attending school. The hours of instruction vary in different cities. In some states the pupils attend part-time school for four hours a week, while in others they are required to attend classes for eight hours a week. With comparatively few exceptions, it was found that in case a pupil failed to report for his classes, his employer was systematically notified and the pupil was warned concerning the possible withdrawal of his working permit in case of repeated offenses.

It is evident that *in some schools much consideration has been given to the problem of grouping these junior workers advantageously*, in order that the instruction might be of the greatest

⁷See Ch. I in Section I of this Yearbook for detailed statements of the guidance activities in these 178 schools.

TABLE VI. RELATIVE EMPHASIS GIVEN TO EACH INSTRUCTIONAL PROVISION
BY THESE 178 PART-TIME SCHOOLS

Emphasis	Number of Times Mentioned
I. Helping pupils to appreciate civic responsibilities.	171
II. Helping pupils to secure work for which they are fitted, and proper training for it.....	164
III. Helping pupils to gain desirable attitudes toward work, employers, other employees, and the community	161
IV. Helping pupils to form suitable habits of using leisure time, etc.	156
V. Helping to increase the proficiency of junior workers for jobs they now hold.....	152
VI. Helping pupils to obtain the best training employment can provide.....	137
VII. Helping junior workers to protect and to increase their health in employment.....	88
VIII. Helping boys and girls to understand some of the important relationships and economic principles pertaining to industry and commerce.....	43

assistance in their daily lives and work. Table VI shows the relative emphasis which is being given to each instructional provision by these 178 part-time schools. This wide variation in emphasis is another indication of the decided lack of uniformity in the practices of the different part-time schools in the localities investigated.

Where there are enough pupils of compulsory attendance age in a factory or business establishment, it sometimes proves desirable to conduct the classes within the factory or office building. This not only seems to insure better attendance, but also affords special material for problems and special equipment which can be utilized in individual, group, and class instruction. For similar reasons, it has been found desirable in some cases to hold home-making classes in private homes or in public school cottages. In both of these cases pupils are usually excused from the shop or laboratory instruction in the part-time school, but are often required to attend the regular classes for instruction in civics, English, mathematics, drawing, and the like.

The most successful instruction has been observed where the greatest flexibility existed in the methods of presenting the work. Much constructive criticism might well be offered with respect to

the mechanical methods of teaching in a number of the part-time schools. It is usually evident that *the interest of boys and girls cannot be held and the aim of the instruction cannot be realized unless the teaching is adapted to the respective needs and abilities of the individual learners.* Of all public school teachers, a part-time teacher should possess an unusual humanistic touch. A large majority of these pupils have left school because they disliked it for one reason or another. It requires, therefore, on the part of the teacher a deft touch of adaptability to bring the pupils into a receptive frame of mind. It is often the case that the teacher must possess a spirit of play in addition to her teaching qualities. It is this spirit which frequently helps to relieve any attitude of compulsion or feeling of drudgery in the school work.

It is noted that *greater care is being taken in selecting teachers for the part-time schools in most cities*, especially where the difficulties in providing adequate instruction are appreciated by the school officials. *The extension and residence teacher-training classes are also reported to be doing much throughout nearly all of these states* by helping teachers determine and organize suitable plans and lessons for their classes, and also by teaching them methods and devices for presenting these units most effectively and economically.

REPORTS FROM 108 EVENING VOCATIONAL SCHOOLS

In addition to the problems in meeting the needs and respecting the interests of these junior workers of continuation school age, we shall consider those problems of assisting the large number of more mature young persons and adults who have left the schools but whose education and training are quite inadequate for efficient service and possible promotion in their specific occupational pursuits. As will be noted in Table VII, the most successful instruction offered for these workers in 108 evening schools has resulted from proper organization of shop, laboratory, and related courses on the small-unit plan, and especially where these have been definitely adapted to the immediate needs of the various individuals and groups.

TABLE VII.

Questions on a Basis for Preliminary Reports on Evening Vocational Courses	Brief Summary of 108 Reports
1. How are the specific and immediate needs of the various workers who can profit by evening instruction being determined and met?	Approximately 88 percent of these courses attempt to keep the instruction flexible by analysis, investigation, co-operation, individual instruction, and short-unit courses (usually from four to twelve weeks).
2. Does the limited time available for vocational instruction in your evening classes make it possible to teach both the theory and practice of a complete trade?	Over 96 percent of the schools are offering extension instruction in both theory and practice of the trades in which supplementary training is most needed.
3. To what extent does your instruction for productive wage earning help the learner to solve the actual problems he meets in his daily work?	Nearly all of the schools are providing more or less successfully for upgrading workers (about 10 percent) by dealing with immediate and advanced problems.
4. Do your short-unit courses, which are organized to help the worker forward one step at a time, provide the best means for aiding him to master his chosen occupation?	About 83 percent of the schools insist upon suitable short-unit courses as the most effective basis for evening school instruction.
5. How do you determine the advisability of offering a given subject by the short-unit-course plan in preference to the long-term-course plan?	Nearly all agree that the needs and interests of the workers and the demand and nature of the trade usually determine this.
6. What are some of the reasons which have frequently caused evening-school students to drop out of their respective classes?	Those mentioned most frequently are "lack of suitable instruction," "lack of proper equipment," "over-crowding of classes," "working overtime," "period of sickness," "changes of work," etc.

These reports indicate with varying amounts of emphasis that there are two distinct groups of trade workers from which the evening trainees are usually recruited: (1) a number of advanced workmen who need special training in related subjects, such as trade mathematics, trade drawing, and the like; (2) many helpers and assistants who have a limited background of practical experience and who need to be taught further tool manipulation, methods of construction, etc.

It is the purpose of the evening vocational school instruction to aid both groups of workers by giving those who are employed

in the industry, in so far as is possible, what they need in skill or knowledge, or both. In a few cases it was found that both of these groups of workers have not only been upgraded on the short-unit plan in the evening classes, but likewise have had trade extension during the dull seasons by means of intensive all-day schedules.

In some cities it is noted that evening school classes are less successful than in others. In more than a few cases classes have been closed for lack of students or for irregular attendance. This is found to result usually when the students do not get the type of instruction they desire. It may be due to several causes, the most frequent of which are "lack of suitable instruction," "lack of proper equipment," "over-crowding of classes," and the like.

Perhaps the reason which is responsible for more losses in evening school attendance than any other is the failure to provide the proper kind of instruction. Too many schools assume that it is their business to dictate exactly what each student should and can take. Although the evening school students frequently misjudge their needs and often are unable to plan their own upgrading programs, it is recognized that the workers' confidence, even in the short-unit courses, can be gained only by making the instruction obviously worth while to them. When this supplementary school work is once 'sold' to the trainees on the upgrading or supplementary extension basis, other needs will be made evident to all concerned, and, as a result, satisfactory solutions will be provided as the occasions demand.

It has proved to be useless to advertise classes in the various trades unless there is a sufficient amount of equipment, as the evening school student often comes for the purpose of getting an opportunity to use equipment or materials which he does not have the privilege of working with in his daily employment. In case he does not receive this desired instruction, he will soon become disinterested and may drop out of the evening class.

Experience has demonstrated that all theory and class discussion for these students must be given from a practical point of view and presented in shop terms to be most effective. The instruction should usually be of such a character that the students can take tangible

knowledge or skill right back to their jobs and put it into practice. If for any reason it does not work out as presented in class, some schools report that the students are apt to become suspicious and may even lose confidence and quit immediately. On the other hand, where this is successfully done, it is found that a new interest exists, as the instructor has gained much added confidence from the individuals in his class.

A large amount of individual instruction must be given. Of course, the instructors must be interested in the things that go to make up the daily lives of the students. Much has been accomplished in some cases, where the instructors have made it a point to show their interest by occasionally visiting the students to find out by first-hand observation just what their daily problems were.

To measure the success of an evening school entirely by numbers is wrong. However, most of the evening students work all day, and the evening is their only time for self-improvement. Unless the class is limited to a number that will give each student a reasonable amount of individual instruction, some are certain to feel that their time is being wasted and consequently they will drop out of the evening classes.

The most successful of these supplementary courses in the 108 evening schools are those which not only emphasize the necessary technical skill and related knowledge, but also co-operate with employer and employees in order to stress the much needed adaptability and self-adjustment in each desirable industrial pursuit. This co-operation has resulted in a greater development of thought-provoking problems in every division of the trades represented. However, it unquestionably is being recognized more and more that production work in industrial occupations is becoming increasingly automatic for a large number of machine operators and semi-skilled workers. This is an important fact, as in our eagerness to safeguard the interests of these trainees, we should not accept opinions blindly, but should seek the truth in preference, whenever possible. At least 36 of these evening extension programs are providing for continuous investigations and analyses to prevent the many possibilities of preconceived course building. These vocational surveys have also succeeded in keeping the in-

struction more flexible by ascertaining the actual demands and changes in both separate and closely allied occupational pursuits.

GENERAL CONCLUSIONS

The passage of the Smith-Hughes Act by Congress in February, 1917, directed attention throughout the United States to the importance of vocational education. Since that time, there has been some opposition to the vocational industrial courses on the ground that they are not needed and that they are expensive. However, it would seem that the pupils who are going into industry have as much right to the training they require for their future vocations as do the pupils who are planning to enter business or professional occupations. Herbert Hoover, Secretary of the United States Department of Commerce, has ably discussed and summarized this question with special reference to the opportunity and obligation of public school systems, as follows:

"If vocational education is worth while, certainly as a nation we can afford the price of such education. Our only concern is to know that it is worth while. If it is, expenditure on account of such education is in the nature of an investment which will yield large dividends from year to year through the progressive increase of labor skill and industrial efficiency.

"We in this country believe that education in general pays for itself and is worth while, and if this is true of any sort of education, it is certainly true of vocational education—that it pays for itself. That is the 'acid test,' particularly of vocational education—that it shall pay for itself. If it does not, it is not vocational education at all.

"Men of affairs the country over are being impressed with the fact that the cost of training labor on the job is one of the great industrial costs, but they know that the cost of inefficiency and lack of training is very much greater, and that labor must be trained whatever the cost. If they or the community do not provide such training, they cannot compete with the foreign producer whose labor is vocationally trained at public expense, nor can we as a nation adequately supply our own needs for the product of labor, if we neglect to provide for the training of labor.

"The cost of providing this training is just as properly a charge upon the public revenue as any other form of education. In the interests of labor itself such training cannot be devolved upon the employer. Organized labor is perfectly right in insisting that vocational education shall be under public supervision and control, so that the interests and welfare of the worker as well as of the employer will be taken fairly into account. The cost of such training certainly should not be put upon the individual worker unless we

are prepared to abandon our traditional policy of providing free education and equality of opportunity for our youth. We cannot in fairness continue to provide specialized education free to the few who propose to enter the professions, while denying education to the many for the commoner vocations.

"A community must pay either for the cost of training labor or for the much greater cost of inefficiency of labor, and inefficiency of labor means inevitably general industrial and commercial inefficiency."

All of these reported findings witness to the fact that the efficiency of vocational industrial education depends largely upon the development of an effective system of co-ordination, paralleled with provisions for individual instruction and appropriate counsellng for part-time, evening, and day school students. In order to be most successful, each type of vocational education and training must provide a definite preliminary or supplementary program for each student, that will preferably lead by successive steps, through divisions of the trade, often to the status of a journeyman. The public schools are 'speeding up' these processes by giving preliminary and supplementary technical knowledge and training in the manipulation of tools (hand and machine), the handling of materials, the reading of drawings, the using of trade terms, and the like.

School preparation for skilled occupations should always be supplemented by definite instruction in the establishments, if the best results are to be had. While apprenticeship training, in its early form, has been almost entirely neglected during the recent years of our rapid industrial development, it is now a generally accepted fact that the employer cannot escape the cost, in time and money, necessary for systematic supplementary or apprenticeship training in the trades or occupations in question.

Two concrete illustrations of this realization on the part of the employers are as follows:

"Young men of the United States are not learning building trades," declares the annual report of the committee on labor of the Associated General Contractors of America, at their fourth annual convention. These trades are those of structural iron workers, plumbers, carpenters, painters, brick masons, roofers, plasterers, paper hangers, building laborers, and stone cutters.

With the exception of the first three, the report stated, there were actually fewer workmen in 1920 than in 1910, and only the structural iron workers and the plumbers had kept pace in their increase with the population of the country.

The report named two causes for the decrease: "The cutting off of immigration by the World War, and later by restrictive immigration laws," and the second was the fact that young Americans were not learning the trades.

The American Engineering Council, in making public a report of its committee on the elimination of waste in industry, with special reference to labor turnover, recently declared that "You're fired" and "I quit" cost metal trade firms in this country \$100,000,000 in one year. "Experts estimated the costs of labor turnover vary from \$50 to \$250 for each employe hired, trained, and separated," the committee report stated. An average figure of only \$50 applied to 2,000,000 employes in the metal trades industry alone, means an average waste of \$100,000,000 in this one industry. This committee recommended that employers study employment methods and reasons for quitting work.

The success of the instruction for industrial education in these 143 city programs has been reported somewhat in detail as to purpose, content, and method. As would be expected, the training and experience of the directors, teachers, and co-ordinators in charge, and the provisions for determining and imparting the skills and knowledge involved have usually been an excellent index to the quality of instruction. The co-ordinators are proving their worth quite generally by assisting teachers in connecting the activities of the school and the occupation, as well as the home and the community in several cities. The nature of co-ordinators' positions allows them to aid the school officials and teachers in maintaining instruction which reflects the requirements made upon workers and prospective wage-earners. They also are able to inform the employers of the educational opportunities which are and can be provided by the school system, with their co-operation.

While it is encouraging to note these marked improvements in methods and procedure, it certainly would be unwise at this time to consider any promising program as more than tentative. These varied, but effective outcomes of the past few years should point the way for further experimentation, which is certain to make possible even more reliable comparisons and measurements. Nevertheless, the suggestive reports in the following chapters should challenge all concerned to study their local programs with the conscientious desire of improving the opportunities which now exist in each unit or course designed as a means of industrial or part-time education.

CHAPTER II

DEVELOPMENT OF INDUSTRIAL EDUCATION PROBLEMS IN PUBLIC SCHOOLS

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This is not an obituary. This statement is made because many of my friends of the academic school predict a renaissance of all things classical. They are right; it is greatly needed. Vocational education must also undergo a renaissance, but it must not be eliminated in the process—it must be strengthened and broadened and given more tangible objectives.

A professor of mathematics in a classical college recently stated with much satisfaction that the theory of formal discipline had come back into its own, and that the time was coming when every teacher of algebra in the high schools would be required to take a course in calculus before teaching algebra. Owing to my ignorance, I made the *faux pas* of requesting information relative to the practical value involved and was informed that, in the first place, no one could be considered 'educated,' in the cultural sense, until he had undergone the mental gymnastics involved in mastering the aforesaid subject, and secondly, that a teacher never could appreciate the true value of zero until she had studied calculus. As I look back upon the period during which I struggled with calculus, I believe that he is right in regard to the latter part of his theorem. I say theorem, advisedly—attaching, of course, the Q. E. D.!

Without a question we are undergoing a period of retrenchment in educational expenditures. All subjects vocational have been constantly questioned by the academic group and we have made enough blunders to offer every opportunity for a good 'come back.' As I read through many clippings of vocational education collected since 1909, and peruse the many rash and impossible

claims made relative to its efficacy as a sovereign panacea for the lesser I.Q.'s in the public schools, and review my early teaching experiences during which I vainly attempted to apply good pedagogical principles to inanimate matter, I decide that we have been strong in publicity but weak in analysis and that we should apply the principles of trade analysis to objectives as well as content.

Recent articles of the "Iron Man," Arthur Pound, type, and the fall of our early vocational education inspiration, Germany, have been hailed by some persons as a final proof that the old idea was right after all, and that the old, so-called cultural education, dating from the monastic period, was vindicated. Shall we ever get down to a rational basis?

Educators are sometimes inclined to follow an educational pendulum, one end of the swing being vocational and the other classical. There should be a point of equilibrium in the swing and national welfare demands that we find it.

As vocational educators, we fail to see beyond the utilitarian objectives, and the classical school takes the attitude of the negro, who, after leaving home and attending school for several years, came back to his home town.

"Is yo' got your education, Mose?" asked his mammy.

"I sho' is," said Mose. "What's mo', I'se got culture."

"What am that?" said his mammy.

Mose hesitated for a considerable period and then answered, "Culture? H'm, dat's sumptin' what I'se got and you ain't."

Culture should be included in the education of every worker, but it should not be spelled with a 'K' and it will never be exactly the same thing for any two people. The man who is happy in his work, who has had that education which enables him to appreciate and enjoy the beauty of a finely designed piece of mechanism, even though it weighs many tons and is covered with grease and dirt, who enjoys his daily relations with his fellow men, who can visualize parts in their relations with the whole, who can impart his satisfaction to others, who can with pleasure interpret the environment in which he lives, moves, and has his being, both at work, on the

street and at home, is cultured, even though he appreciates not the significance of "zero."

I recently heard the statement that Germany's fall was due to her intensive vocational education policy and that she now had turned to the study of social relations. The truth of the matter is that no other nation could have so long withstood the siege of the combined armies of the world, and that Germany is still carrying on her program of vocational education, but that she has realized that the element of social relations is of equal importance to the strictly utilitarian phase of her educational program.

We have a part-time, apprentice bricklayers' class in Cleveland. Is there culture in bricklaying? We believe that we have found it through watching these boys at work. For example, a new building has significance to me now. I feel a little thrill of elation when I recognize a Flemish bond, when the coloring of tapestry brick is well matched, when the construction is well done, and I know that these boys are obtaining a culture in their own life occupation which will mean as much to them in their lives as "zero" does to my mathematical friend in his environment, but we should not make the latter gentleman learn how to match brick nor should we require the bricklayer to learn the value of "zero." Both forms of culture are necessary to our national welfare and for the growth of our civilization.

We must have bricklayers, and some men, by capacity, aptitudes, and interests, will become bricklayers. An education which will make the bricklayer feel that culture is something that the other fellow has, and that it is something that he is unable to get, will never cause a social unity and a happy nation.

Relative to the age of the "Iron Man," one feels that many truths are uncovered by Arthur Pound. We who have been engaged in attempting the education of tradesmen have found these things out long ago.

A large percentage of our shop jobs require but a minimum of intelligence and may be mastered in a comparatively short time. The machine does the rest. But who constructs this wonderful piece of mechanism and how frequently must it be renewed? Its very existence has eliminated the possibility of educating skilled

tradesmen through the medium of the shop itself and yet the construction and replacement of these wonderful mechanisms require a large corps of skilled mechanics.

Our schools, then, are faced with this problem: A large group of boys with low I.Q.'s entering jobs requiring the minimum of vocational preparation, and a smaller group of pupils entering jobs requiring high aptitudes and capacity and considerable trade-preparatory training which cannot be obtained in the industry itself except in cases where corporations maintain training schools.

There are three mediums offered by the Smith-Hughes Law for the solution of this problem: the day trade school, the part-time school, and the evening trade extension school. At present, we are decidedly enthusiastic over the second method and, like the burned child, avoid the first. The third form of vocational education has never caused any embarrassment; hence we are content to allow it to continue as it is.

What is the objective of the all-day school?—The preparation of boys and girls, fourteen years of age and over, for definite life vocations.

I shall briefly state the cause of the "burns" which we have suffered, but which have not been severe enough entirely to discourage many of us concerning the possibilities of the all-day trade school. It is believed that this form of education has a legitimate place if administered correctly and if given an opportunity for natural growth rather than attempting to plant it in a rock pile and water it with mistakes. Following is a list of what I consider to be the chief causes of the failure of *some* all-day trade schools in the past:

1. Adequate surveys followed by careful analysis for the determination of definite objectives were not made preceding the organization of schools of this type.
2. The schools have been made a dumping ground for failures in the academic schools and also for incorrigibles.
3. Proper working contacts have not been made with the labor organizations and with the employers.
4. Pupils have entered without proper guidance that should have come through vocational information and pre-vocational shop work in the junior high school.

5. Effective placement activities have not been organized.
6. Pupils have entered too young to profit by the content offered and too young for placement upon the completion of the school work.
7. Too big a 'show' of productive work has been attempted, neglecting the necessity of every boy's learning every fundamental trade operation.
8. There has been too much narrowness in our course content, with neglect of the avocational element in the worker's life.
9. Industry has not co-operated with the school until labor troubles developed, and then has attempted to exploit the all-day school to the detriment of the pupil.

Relative to Point 1, the question, of course, arises concerning objectives. Should we include local trades only, or utilize accepted trades common to the country?

This in turn influences Point 5. Unless we educate for trades common to the community, placement becomes impossible. Therefore, it seems to me that both factors must be considered—local placement opportunities and the possibility of placement in other parts of the country in the same trade.

In answer to Point 2, the academic school man throws up his hands and cries: "What shall we do with the defectives, if they cannot learn a trade?" In answer to this I would suggest that special classes, including training in hand work, be operated for the defectives, which will enable them eventually to enter "one-operation jobs" in various trades as the economic demand arises, but I would call attention to the fact that a mental defective never has, and never will, become a skilled tradesman. We are creating a false, 'white shirt,' social attitude by creating the impression that only the defectives should enter trades occupations. This group will eventually leave school, enter industry, and operate machines built and maintained by the boys with greater capacities who have been trained in trade-preparatory classes. The retarded boy should be so trained that he will be able to go from job to job in various shops as the national need arises, and that he will be happy in

working up to the limit of his capacity, if given an educational content which he can assimilate in school and utilize in life.

If the all-day trade school is limited to the smaller group mentally qualified to enter the skilled trades, Point 3 will take care of itself. Your employer and your labor organization will never sympathize with a school which has for its objective the flooding of the trades with a group whose mental capacity is so low that the academic school has given it up as hopeless.

Point 4—lack of suitable earlier guidance—cannot be emphasized too much. No child should enter a trade-preparatory course until he has made a careful study of all vocations, considered their opportunities, and interpreted his own interests, aptitudes, and capacities in terms of the various vocations through manual expression in the pre-vocational courses of the junior high school.

Point 5. Placement activities should be considered a vital factor of the situation. A boy who has received two years' training in machine shop practice, and who is found, two years later, working as a grocery clerk, certainly is a glaring advertisement of either misdirected education or a lack of interest upon the part of the school in marketing its product efficiently. The truth of the matter is that so many pupils of low mental caliber had been forced into the trade school that there was no market for the product of that quality.

Point 6. Several skilled trades do not desire to accept boys under eighteen years of age. Experience has proved that two years is a desirable period for trade-preparatory instruction. Hence, it may not be desirable that pupils should enter the trade school until they are sixteen or until they have finished the junior-high-school pre-vocational courses. Over-age boys, provided their mentality is normal, should be accepted, but not defectives. The average boy who has too low a mentality to pass at least the junior-high-school requirements will never make a skilled tradesman.

Point 7. Productive work should offer instruction in shop methods, develop creative ability in designing methods, teach co-operation and social relations, but should not be carried to the point where the product is the chief objective. We should rather analyze and check a teaching content through some form of block operation

card in order that every boy should have contact with every fundamental operation involved in the trade.

Point 8. The utilitarian aspect of the trade school content should not be carried to the point where the avocational phase of the worker's life is entirely neglected. He should have a knowledge of social and economic values and should develop capacities of appreciation. The tradesman, for instance, should learn to read and enjoy good books—and I do not mean by good books Chaucer's *Canterbury Tales* in Old English. (I wonder how thick the dust is upon books of this nature in the public libraries, in spite of the fact that practically all high-school graduates have been exposed to their contents.)

In regard to Point 9, the employer should be approached consistently and persistently by the school before he approaches the school with some impossible proposal. We have found that the employers' association can and will co-operate with labor organizations to the benefit of all-day trade schools if all parties are approached at the right time. Without this co-operation the school is "between the devil and the deep sea."

In regard to the part-time school, it is believed that wonderful opportunities are offered for the education of the boys and girls already employed in industry. We are enabled through this medium to develop the pupil who has high capacities, but who has been forced by economic pressure to enter industry. Through trade extension teaching content we may elevate him from the limitations of the 'one-operation job' to the opportunity for employment in a skilled trade.

The boy of lower mentality, who never will get beyond the 'one-operation job,' may be trained 'horizontally' rather than 'vertically,' that is, in place of attempting to teach him the content which his limited capacities prevent him from ever mastering, we can extend the content upon the horizontal plane to cover a broader field of the jobs requiring only the simple operations, so that he may always find employment, irrespective of the intensive seasonal demands of certain industries.

Both groups may be developed socially and given the avocational background for that happiness and appreciation of the things

with which they must work and by which they will be surrounded, according to each individual's capacities and aptitudes.

Compulsory part-time work was discouraging in that we had all of the 'dregs' as well as the better material. In many cases it seems impossible to do anything for the pupil and yet, the fact that we can do so much for so many, possibly warrants compulsory attendance upon the part of all. Indeed, I am confident that, no matter how poor or how negative may be the attitude of the material brought in, we shall be able to do at least a little towards forming a better social attitude, although it may not be immediately manifest.

Part-time education becomes almost an individual matter and for this very reason is difficult to administer. But, given the exceptional teacher and small enough groups, its possibilities are unlimited, and the larger the city, the greater the opportunity for the division of groups into units large enough for economical administration and for an education best adapted to the needs of the individual.

The evening trade extension classes have made good from the start. I believe that it is a wise national policy to enable our adult craftsmen to come back to school and to perfect themselves in that phase of their life vocations in which they lack sufficient training.

The objection is raised that no provision is made for the man without a trade. Adequate trade-preparatory courses will eliminate this problem eventually. For the present, the question arises: "Is it possible to teach an entire trade through evening class instruction? Can a teacher efficiently instruct a mixed group of beginners in trades?" As our funds are limited, is it not wiser to utilize them in educating the few best equipped to profit by the instruction? This does not prevent communities from independently establishing trade-preparatory classes, if they so desire, nor does it prevent corporation schools from operating their own apprentice training classes.

In conclusion, may I state my hope for a renaissance in all matters educational, my hope that we may all eventually become broad enough to demand neither that every one appreciate "zero" nor that anyone be given an education so narrow that it will limit him to a knowledge of things utilitarian only?

CHAPTER III

TRADE AND JOB ANALYSIS AS AN AID IN VOCATIONAL CURRICULUM BUILDING¹

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THE NEED FOR DIRECTED LEARNING

In the acquisition of any kind of skill there are two opposite ways of proceeding. According to the one, the learner makes random, undirected attempts, most of which are unsuccessful. As the number of trials increases, however, the unsuccessful movements decrease in number and the successful ones come more quickly until finally the learner acquires the desired skill. This method is usually called 'trial and error.' It is possibly best illustrated by the way in which animals learn the tricks which we see them perform.

According to the other method, the learner makes no blind fumbling movements, but follows a procedure which has been laid down by some one who has already mastered the skill. This we may call 'directed learning.' It is typified by much of the learning that goes on in school, especially the forms of human learning where reason and free ideas play an important part.

¹The writer desires to acknowledge the excellent assistance rendered by a number of persons who, at the request of the editor, gave their views regarding the subject under consideration. Owing to limitation of space, these contributions could not be presented in their entirety. They have been incorporated, however, in such a way as to make the article an authentic representation of the best opinions and practices in the field. Specific acknowledgments are scrupulously made in the body of the text, and copious references to the publications of these individuals are made in the references that close the chapter. By way of further acknowledgment the writer desires publicly to thank the following persons for their kind responses to the chairman's request for their views: Clyde A. Bowman, Director of Industrial Arts School, The Stout Institute; Werrett W. Charters, Director of Bureau of Co-operative Research, University of Pittsburgh; Layton S. Hawkins, Director, and Merritt W. Haynes, Assistant Director, Department of Education, United Typothetae of America; Emily G. Palmer, Special Agent for Training Part-Time Teachers, University of California; Robert W. Selvidge, Professor of Industrial Education, University of Missouri.

In a good deal of everyday learning the trial-and-error method predominates; as, for example, in a child's acquisition of skill in crawling, and co-ordinating hand and eye. In the learning that takes place in school, however, is to be found more directed learning. At least, such is the intent of education. For the trial-and-error method is wasteful. We need not spend time arguing the truth of this statement. Educators generally accept it, and are directing their energies to the elimination of waste. In spite, however, of their earnest efforts, extended over a period as long as man's civilization, there still exists in schools a great amount of wasteful trial-and-error learning. Especially is this true of the so-called 'vocational subjects.'

One reason for this is that these subjects have been added to the curriculum so recently that adequate methods of teaching them have not yet been evolved. Another reason is that they are perhaps more complex, in the sense that they involve a greater diversity of co-ordinations than the more strictly academic subjects. They are psycho-motor, involving co-ordinations between hand and brain; between what the psychologist calls "idea-systems" and "motor systems." And between hand and hand, and idea and idea. Think how many parts of the body must be co-ordinated in such an activity as typewriting: trunk muscles, arm-hand-finger- and eye-muscles. And think of the things that must be retained in mind and reduced to automaticity: location of keys on the keyboard; the mechanism of the machine; spelling, punctuation, and the like.

ANALYSIS A PRELIMINARY TO EFFECTIVE INSTRUCTION

Because of these facts, teachers of vocational subjects need to take especially vigorous measures to make their instruction a matter of directed, rather than undirected learning. In making the transformation the first step they must take is to analyze the work as it is performed by an expert worker and specify its components. The second step is to analyze what a learner must do in acquiring the necessary skill. Only after taking these steps can a rational method of directed learning be developed.

DEFINITIONS OF JOB ANALYSIS

This process is roughly called 'job analysis.' A number of attempts have been made to give a formal definition of the term. As many as ten definitions are quoted by Strong and Uhrbrock (16, p. 21, 22).² Perhaps as serviceable a definition as any is: "Job analysis is a process of dissecting a job and describing its component elements." (1)

CURRICULUM BUILDING ONLY ONE END OF JOB ANALYSIS

It should be remarked that job analysis may have other aims besides that of vocational curriculum building. It may be carried on from the standpoint of the efficiency engineer, desirous of improving methods of work and increasing efficiency; from the standpoint of the employment manager and vocational counsellor desirous of listing the requirements of a job.³ As colored by these various ends, the attempts at job analysis have gone under several names—'vocational analysis,' 'trade analysis,' 'occupational analysis,' 'job analysis.' The first two refer to analysis of a profession or a trade; the third, to analysis of a specialized occupation within a profession or a trade; the fourth, to analysis of a particular operation within an occupation. The distinctions may be illustrated by calling the profession of physician, a 'vocation'; that of eye-specialist (oculist), an 'occupation'; and that of dilating the pupil of the eye, a 'job.' Again, the machinist's trade is a 'vocation'; lathe operating an 'occupation'; cutting a three-eighth inch shaft a 'job.'

The distinctions between these kinds of analysis have not been carefully observed; the term 'job analysis,' since achieving its war-time popularity through the activities of the Personnel Division of the army has been quite indiscriminately applied to the analysis of professions and trades and the jobs which they involve.

²Numbers in parentheses refer to the references at the end of this chapter.

³Though it has been properly suggested by Scott and Clothier (13) that this latter would best be called 'occupational description,' the name 'job analysis' is still often applied to it. For a list of other ends for which job analysis may be made, see Strong and Uhrbrock (16) and Kitson (10).

Neither have the distinctions been clearly made between the different ends of job analysis. From one point of view it is held that there is no difference in the ends for which the analysis is made. Analysis is analysis, and the same procedure must be followed, regardless of the end to which the results are to be applied. This point of view is used to justify those who use the term 'job analysis' indiscriminately.

In point of fact, however, as it is generally practised, job analysis is employed for but one purpose at a time, and the best results are probably secured, at least in this embryonic stage of job analysis, if the exact purpose of the analysis be kept in mind while it is being made. In harmony with this statement it should be made very clear that the analysis herein considered is that which is made for the specific purpose of arranging courses of study in the occupations.

STEPS IN JOB ANALYSIS

It is generally agreed by those who undertake job analysis for the purpose of vocational curriculum building that the following steps must be taken: (1) List general facts concerning the job, such as length of learning period, special health risks, entrance requirements, etc. (2) Name and describe the duties inherent in the job, both regular and occasional. (3) Set down the knowledge required to do the job. (4) Set down the supplementary and related knowledge to be desired. (5) State the promotional possibilities.

DIVISION INTO UNITS

A slightly different formulation of the steps to be taken has been advocated by some investigators, according to which an occupation is divided into main divisions called 'Groups;' each Group into 'Units;' and each Unit into 'Lessons.'

It will be noted that the former of these methods seeks to list all the jobs involved in the occupation, while the second seeks rather to describe the operations of the occupation in various combinations. According to Selvidge (14, pp. 25, 26):

"Very few trades can be analyzed on the basis of *jobs*. It is not practicable to list all the jobs that may occur in a skilled trade. Even if it were

possible to do so, it would be necessary to analyze each job into the processes involved in doing it, in order to teach the job. Since every conceivable job is made up of the operations of the trade, in various combinations, the simplest method of procedure is to analyze the trade for the operations involved and use this analysis as the basis of analyzing and teaching any job that may arise. This trade analysis is in reality the basis of all job analysis. No job can be analyzed except in terms of the operations of the trade or vocation.

"It is not necessary to list the unskilled or low skilled operations at all, as they can be performed by any person of ordinary intelligence with little or no instruction or practise."

According to this view, too, it is not necessary, *in making the analysis*, to list the jobs in any particular order, especially in order of their difficulty, for "it is safe to say that in case of more than half the operations of a trade it is impossible to determine which operation is the most difficult to perform. It is also true that an operation might be difficult for one person and easy for another. In practise the easy and difficult come together."

An attempt to reconcile the differences of opinion regarding the listing of operations and their arrangement for teaching has been recently made by MacDonald (12). The writer ventures to propose that a psychological analysis of *the process of learning a trade or job*, carried on with rigid scientific technique, will reveal what is in the majority of cases the best order in which the separate operations should be presented to the learner.

WHO MAKES THE ANALYSIS?

The co-operation of several classes of persons is needed in making the analysis. (1) Workers in the occupation are indispensable. Their interest must be secured and their willingness to submit to observation and interrogation. (2) An investigator is also necessary who has had considerable scientific training, preferably training in engineering (at least for analysis of the mechanical trades) and psychology. Such equipment on the part of the investigator is, of course, too much to hope for at the present time. Some persons do not see the need for it at all. Strong and Uhrbrock, however, are quite ready to demand it, averring, "the job analyst should be a psychologist of no mean order" (16, p. 29). Surely, as job analysis takes on more exactness and reliability, it

will require all the rigidity which a scientific training can bring to the work. It is also pointed out that the investigator upon whom falls the main responsibility of the analysis should have considerable ability as a salesman, for he must convert all concerned to a belief in job analysis. He should be capable of meeting easily and intelligently men of all stations—executives as well as manual workers. (3) Finally, the services of a teacher are necessary, one who has had wide experience in teaching the so-called vocational subjects to the class of persons who are going to undertake the subject being analyzed.

THE METHOD OF PROCEDURE

The first thing the analyst must do is to make contact with persons doing the work. This, as was just said, requires great tact and adaptability. The analyst must sell the idea to executives and workers. Having done this, he has next to observe the work in a large way in order to see its broad outlines and its relation to other jobs. The analyst observes the operations involved and lists them just as they come. This first list should then be revised by a 'check.' Indeed a number of revisions will be necessary. These will be based on repeated interviews with workmen, foremen, and other executives. One advantage in using a number of persons for purposes of verification is that one person will think of details which another one forgets to mention. Another reason is that certain occupations are rather poorly standardized. Different practices prevail among different workers and different shops; in particular is the terminology likely to be confusing under such circumstances. Hence, the reason for interviewing a number of persons in order to make a correct picture of the occupation.

It is recommended that an interval of several days elapse between observations and re-checks. This will allow new phases of the work to occur to both worker and investigator, which may be jotted down as they come to mind and later compiled in order.

Some analysts report that they get best results when they actually take a hand in the work themselves and thus experience the 'feel' of it.

Care is usually taken to secure the blanks and forms used on the job.

A. List Essential Information

This procedure refers chiefly to the analysis of the physical operations involved in the work. Another phase, equally important, is to catalog the information required. Theoretically, an analysis which aims to furnish material for a complete curriculum should list all the facts that are necessary to the effective performance of the job. It might be interposed here that, if the vocational curriculum were to contain merely these bare essentials, it would degenerate into a most crassly materialistic and narrow kind of education—one which, if never broadened, would doom its victim forever to a treadmill of the same routine. Second thought would surely condemn such a literal carrying out of this principle. Surely, the curriculum should provide knowledge which will enable the one being trained to advance beyond his immediate job and to progress as years go on.

B. Note Related Knowledge

In order partly to overcome this narrow conception, analysts are advising that note be made of related knowledge, not absolutely necessary to the performance of the work, but nevertheless desirable. It is to be hoped that as the real force of this is seen, it may have a strong influence on vocational education in general. An excellent example, showing how adherence to this principle works, is furnished by the results of the analyses of printing carried on by the United Typothetae of America (18) and by investigators at Carnegie Institute of Technology (16). The curricula finally worked out call for the teaching of 'related subjects,' such as American, Social and Industrial History, Health and Safety for Printers, Design for Printers, Cost Accounting, Advertising, Banking and Credit, Chemistry, Physics, and Psychology. All these subjects, it is easily seen, are related to printing and, while not essential, still are extremely desirable to make an enlightened workman, and especially a type of workman who can be promoted to an executive position.

C. Prepare Definite Written Instructions

After the analysis is made, the operations should be reduced to written form and presented step by step as the learner is to per-

form them. This written instruction is called the 'operation sheet.' Here is the place where the operations, or units, should be taken from the analyst and re-arranged in the order in which they should be taught. In illustration, we quote a concise description furnished by Haynes:

"The lessons [of the Typothetae course (18)] are not arranged on the basis of time, but on the basis of teaching a definite job or idea; some lessons may take fifteen minutes and others from eight to ten hours. Each lesson sheet is printed separately and is intended to be self-teaching as far as possible. It gives to the student the necessary information concerning the job which he is about to perform, then it prescribes definitely his shop practice in a series of carefully graded exercises. At the end of each lesson is a list of questions calculated to prompt him in reasoning out the 'why' of the work which he has performed, as well as to test his mastery of the facts stated in the lesson text. The answers to these questions he is to write out in his notebook. Finally, with most lessons there are given a few references for further reading and study if the student is inclined or has been stimulated to go deeper into the subject.

From the use of instruction sheets prepared and used in this manner certain advantages are expected: the work of the instructor will be systematized and much confusion eliminated, the time of both students and instructor will be conserved. Each apprentice or student may progress individually as fast as he is capable of going without keeping the pace of the whole class; the student receives training in following out written directions, a thing he will have to do in his later vocational life. He is also trained to think and act independently without relying too much on the instructor."

An advantageous auxiliary to the written instruction may be found in the graphic layout advocated by Bowman (4). Since we are limiting this discussion strictly to job analysis, however, we shall not dwell longer upon the preparation of instruction sheets.

ANALYSIS FOR CURRICULUM BUILDING IN DIFFERENT SITUATIONS

It is generally agreed that the lessons evolved from the analysis must be flexible, so that in any given course of instruction, units or even groups, may be omitted, added to, or interchanged. In giving instructions to apprentices on a job it might be that certain elements evolved from the analysis could be eliminated as topics of formal instruction. In part-time schools similar elisions might be desirable. In case a worker wished to receive training for a position above the one he is now occupying, the pertinent elements

might be chosen from the results of the analysis and concentrated on. In 'try-out' courses, where only a representative sample of work in a trade is to be taught, the appropriate section can be lifted out from among the units disclosed by the analysis. Other variations in the uses of the results of the analysis may be introduced according as the curriculum is being constructed for junior high schools, senior high schools, or vocational schools.

ANALYSIS OF SIMPLE AND COMPLEX OCCUPATIONS

As at first conceived as a preliminary to vocational curriculum building, job analysis was thought of almost exclusively in connection with the so-called 'trades' (manual). Even yet, it is thought of by many persons only in this connection. There is coming to be realized, however, a growing feeling that the technique of job analysis may be applied with equal benefits to the so-called 'higher occupations,' perhaps even to the 'professions' (15). Very little application has so far been made of job analysis in these more complex occupational fields. Such applications as have been made here have been directed chiefly towards drawing up job specifications for use in personnel management, rather than for arranging courses of instruction. Nevertheless, the idea of thus employing analysis as the basis of a curriculum for education in the professions is a fruitful one and will undoubtedly receive attention.

In analyzing complex occupations there are several difficulties not met with so pressingly in the more simple manual occupations. In the machinist's trade, for example, there is one phase that remains stable—the physical materials. With such an occupation as selling, however, the materials are not physical; they are human beings, much more variable than inert matter. Still, even in such fields, if an ingenious psychological technique be employed, much can be accomplished. Charters reports the analysis of the job of secretary into 861 duties; an investigation among 715 secretaries disclosed the relative frequency with which each of the 861 duties occurred.

In discriminating between analysis of *duties* and analysis of *difficulties*, Charters observes that the former resist analysis more stoutly than the latter. In analyzing the work of an executive who

handles men, it is difficult to set down exactly what the executive does; so many of his actions are semi-conscious and hardly reducible to rules. But the questions: "Where do executives fail in handling men?", and: "What are the differences between a good and a poor executive?" are more easily answered. Thus 59 difficulties were encountered by salespersons in department stores. These go a great way toward yielding items for the curriculum. Charters observes: "A difficulty analysis condenses the topics of instruction to their minimal essentials because the difficulties are always less than the duties, except where every duty is difficult."

A COURSE IN TILE SETTING ARRANGED AFTER JOB ANALYSIS

In order to illustrate concisely in a specific trade the application of the methods so far described, a description will be given of the way in which a course in tile setting was arranged. This description is kindly furnished by Mr. Hawkins.

"To assist in the solution of the problem of training apprentices in the tile setting trade, the Associated Tile Manufacturers have prepared a basic course in tile setting. It consists of both shop work and related study. The shop work is arranged in a series of tile setting jobs. Complete instructions are printed separately for each job, thus providing for the student a series of individual lesson sheets completely illustrated with pictures and drawings. The jobs have been determined through a careful analysis of the trade and have been arranged in the order of their learning difficulty. The related technical study is based on the shop work and directly related to it. The plan of the course is to give experiences to which theory and technical information will be related.

To meet the needs of practical tile setters who have little or no experience in teaching, an *Instructor's Guide* has been prepared. It includes a discussion of what to teach, how to teach, instructional devices, the lesson, interest, grading students, and specific suggestions concerning each job in the course.

An analysis of the trade was made by consultation with a number of experienced tile setters and tile contractors who were previously tile setters. After the trade had been analyzed into a series of work jobs, these jobs were arranged in the order of their learning difficulty. For the basic course to be used in pre-employment training, those jobs were selected which formed the basis of most of the average run of work in the industry. The text material for this basic course was prepared in the following manner.

An experienced tile setter and a man familiar with the industry, inexperienced in tile setting, but able to express himself in clear, forceful English,

were selected to assist the Director of Education in the preparation of this material. The tile setter first described the job, and directions for performing the job were then written out. The tile setter then performed the job and the text was corrected through observation of his work. The man who had written the text of the lesson then took his own text and worked it out under the observation of the tile setter, corrections being made where the directions were faulty or insufficient. This process was followed throughout the preparation of the course, involving the following steps: (1) Description of the job by the tile setter; (2) Performance of the job by the tile setter; (3) Performance of the job by an inexperienced man under the direction of the tile setter.

After the lessons had been prepared, the material was submitted to a group of experienced tile setters for corrections and suggestions. A group of seventeen apprentices were then selected from several different cities and sent to Dunwoody Institute for a three months' intensive course, using the basic lessons as their text material for both shop and related work. The tile setter and the instructor who worked out these lessons were in charge of the instruction, and the directions and descriptions were revised as the experience of the class showed revision to be necessary. This class was conducted for the purpose of trying out the course. Copies of the course are now available for instruction purposes. (Address, The Associated Tile Manufacturers, Beaver Falls, Pa.)"

TECHNIQUE OF EXPERIMENTAL PSYCHOLOGY IN THE SERVICE OF JOB ANALYSIS

The next step to take after making these practical analyses is to make the analysis more intensive, to state in still smaller units what the learner of a given trade must learn, and how he had best learn it. This has been recognized to be a psychological inquiry, and to its prosecution the energies of psychologists have been invoked.

This undertaking must be marked by the employment of the most rigid scientific method. That is, psychology, in attacking job analysis, must employ the experimental method characteristic of all science: to state its problem very clearly; to arrange conditions so as to deal with but one thing at a time; to observe this one thing a number of times; to record what is observed, so far as possible, in quantitative terms; to tabulate all figures in orderly array so that they may be readily perceived and understood; on the basis of these results, to draw conclusions.

As for instruments and apparatus, they will vary with the problem. Some may be elaborate, others as simple as a stop-watch or a slide-rule. Measurement is our aim, and the simpler we keep our tools of measurement, the more likely we are to use them successfully.

A. Scientific Analysis of Typewriting

One who desires to make such psychological analysis of a trade or job to-day will not be traversing wholly unbroken ground. For, more than twenty-five years ago, certain far-sighted psychologists set up sign-posts. As long ago as 1893, long before the term 'vocational education' came into its present popularity, Bryan and Harter conceived the idea of investigating the psychological processes involved in learning telegraphy. Following the scientific procedure just formulated, they discovered the rates of receiving and sending that could be attained at the end of four, eight, sixteen, etc., weeks; the places where the greatest difficulties occur and the causes of some of these difficulties (5). About ten years later Book made a similar study of the acquisition of skill in typewriting (2). Wells, in 1916, studied the psychological factors that enter into the work of a finished typist (19). Since these studies in the field of typewriting illustrate so well the scientific method that must be followed in applying psychology to the work of job analysis, some of their results will be briefly noted.

The phases of typewriting that have been most thoroughly investigated are these:

1. The stages through which a learner must pass on the road to the acquisition of the requisite skill.
2. The times required for doing the various operations after skill is attained.
3. Listing and analysis of the difficulties to be encountered
(a) in expert typing, (b) in learning to typewrite.

To speak in greater detail, there have been found to be three stages in the learning of typewriting. First a stage of letter association, when the learner must spend his energy and focus his attention chiefly upon associating letter with key, and letter with finger, and finger with key. Next, a stage when letters group

themselves into words. The word becomes the unit; the learner begins to think, not of individual letters, but of groups of letters forming words, all the while thinking in terms of typewriter keys and finger movements. Then comes an 'expert' stage when the unit is not the letter or even the word, but the phrase or clause or even sentence. Indeed, writing at this stage becomes practically continuous. There is an unbroken stream of skillful movement.

Another phase to which investigation has been directed is the accurate measurement of the times required for the several operations involved in typewriting. Some of the measurements read this way:

1. Time required for a single stroke in errorless typewriting, 160 thousandths to 180 thousandths of a second.
2. Time required for carriage return, .87 to 1.28 seconds.
3. Time required for back-spacing and back-space strikeover, one second—as much as that required for five or six strokes.

An interesting demonstration has been made, in this connection, of the nature of the waste motions which can slow up the carriage return. "One operator brings the thumb against the hook in the lever and pushes it back with a single extensor movement of the arm; the other grasps the lever with the fingers, giving it a distinct twist. These latter motions result in a decrease of some 33 percent in total typewriting speed, not to mention the additional muscular strain put upon the arm" (19).

The investigations which have been made of the difficulties of the learner have resulted in charts showing the speed which a learner may be expected to reach at the end of one, two, or three months, and the number of errors which may be expected at each of these periods. (These charts are available in Book's report, p. 20.)

Considerable investigation has centered around the retardations that usually occur. When the learner is retarded in his progress—when, in technical parlance, he is on a plateau—the method of analysis may throw light upon the causes for retardation. Analysis shows that these retardations usually come at some 'critical stage.' And the psychological situation at such times is characterized by lapse of attention, slighting of details, forgetting of instructions,

diminution of interest. The learner grows discouraged or lazy, or impatiently tries to go ahead without laying a foundation of essentials.

Now, the learner is usually ignorant of the cause of his lack of progress. And if he should by chance discover it, he would not know how to overcome it. Here is the opportunity supreme for the wise analytical pedagogue. For, by means of analysis, he may discover the difficulty, may point it out to the learner, and prescribe the remedial measures. The example just cited shows the interesting fact that the service which the instructor will render consists not alone of giving technical aid; it may involve as well the arrangement of emotional aids to the jaded interest, and the provision of inspiration to renewed effort (3).

Another interesting phase of typewriting is the analysis of errors and the investigation of their causes. They fall naturally into four groups: omissions, substitutions, transpositions, and additions.

An example of the first is the writing of the word *familiarity* without the *m*. The key may be struck so lightly that it does not make an impression, or even move the carriage along. A typist often manifests a tendency habitually to omit a certain letter, such as *a*, *s*, *r*, *m*, *t*.

An example of substitution is the substitution in the word used above, of *k* for *m*. A typist often manifests a persistent tendency to substitute a certain letter for another, such as *j* for *h*, *z* for *x*. Any intelligent teacher may, by a little statistical investigation, discover such tendencies, direct the attention of the learner to them, and take the necessary steps to avoid them.

An example of transposition is writing "ture" for "true," "parise" for "praise."

An example of addition is the writing of "tripe" for "trip."

These lapses should not be treated as unaccountable accidents. To the scientist nothing is an accident. There must be a cause. We shall not go so far as to invoke the overworked Freudian hypothesis for an explanation of these lapses; but we shall aver that they come from some factors of which the learner may be ignorant—perhaps technical faults, such as "dropping of the hands

out of alignment, or directing the finger positively toward a wrong key," or ideational or emotional interferences. Whatever the causes, analysis is the technique that must be employed to isolate them, and the point of departure from which improved methods of instructions must start.

B. Measurement of Eye-Movements of Proof Readers

A more recent application of the technique of experimental psychology to the problem of job analysis has been made by the writer in the field of proof reading. Eye-movements—one of the most important operations in proof reading—were examined in order to determine what were the characteristic form, rate, and regularity of the eye-movements of good proof readers. For purposes of contrast, the eye-movements of poor proof readers were also examined.

As has been shown by several investigators, reading proceeds by means of a number of jumps and pauses on significant portions of words. Measures of the extent of these jumps and the length of the pauses are obtained by means of a moving photographic film upon which is photographed a ray of violet light reflected into and out of the reader's eye. This light is interrupted every fiftieth of a second by a tuning fork vibrating at that rate. Thus the eye-movements record themselves on the film as a series of small dots, each representing one fiftieth of a second. Table I shows the average number of pauses and the average length of pauses in fiftieths of a second, made by good and poor proof readers while reading five lines of matter.

TABLE I.—EYE-MOVEMENTS OF PROOF READERS

	Average number of pauses per line	M.V.	Average length of pauses	M.V.
Good	7.4	.48	17.1	1.66
Poor	11.0	2.00	19.3	3.64

From these results comparisons may be made as follows:

1. A good proof reader, reading the kind of material used in the investigation, makes, on the average, seven pauses per line.

This is the standard that might be set up (for this kind of material) for the attainment of a new proof reader.

2. A good proof reader, on this kind of material, pauses each time, on the average, seventeen-fiftieths of a second.

3. A still more important fact is that a good reader generally makes pauses of about the same length. That is, he is regular in reading; this is shown by the small mean variation, which is 1.6-fiftieths of a second (11).

ADVANTAGES OF EXACT SCIENTIFIC MEASUREMENTS

It should be clearly understood that this particular application of psychological technique to the analysis of a job does not pretend at all to completeness. Its contribution to the building of a curriculum for education in printing such as that outlined by Mr. Haynes is only slight. Nevertheless, such careful and minute study of the work done by expert workers in a trade will furnish facts which can be incorporated within the curriculum. Pushed further, as in the occupation of typewriting discussed above, it may reveal the difficulties which at various stages of the learning process will beset one who desires to learn a trade, and thus permit the instructor to institute preventive measures. It will furnish correct qualitative standards showing exactly what must be done in the occupation. It will also furnish quantitative standards showing just how fast and accurately the operation must be performed.⁴

A very desirable outcome of this scientific analysis is that it gives measures in minute terms. Surely, as methods of instruction in occupations become more and more highly advanced, it will be desired to instruct in the finer points of the occupational processes, for all of which this minute analysis will be a requisite.

Most important of all is the fact that this scientific method of analysis gives results that are valid. They deal not with opinion, but with measured fact. They permit one to say: "I know." And

⁴In this connection it is pertinent to prophesy that the time is soon coming when there will be a demand for educational (attainment) tests in the subjects of the vocational education curriculum analogous to those in such subjects as arithmetic, handwriting, and the like, and that as a preliminary to the invention of such tests, the quantitative analytic method is indispensable.

thus they constitute reliable foundation stones on which to build a curriculum.

Of course, the effective development of this method of minute and exact analysis will require time and the co-operation of a great many persons—psychologists, teachers, and workers in the occupations. Awaiting this, there is still much work that should be done along the lines of the larger analysis described in the earlier sections of this report. The excellent models already furnished by investigators in certain trades should be followed in other trades.

OTHER ENDS OF JOB ANALYSIS

All the while it should be remembered that analysis of trades and jobs is being made by others than those interested merely in vocational education. It is regarded by vocational counsellors as a prerequisite to intelligent vocational guidance, for only after knowing the components of an occupation can one advise an individual regarding his probable fitness for it. Personnel managers in business establishments, in their dual capacity of vocational guidance and selection, also use job analysis in making out the job specifications through which they employ their workers. A newer use, which has come into recognition since the war-time burst of enthusiasm for personnel work, is connected with the grading and routing of jobs for the sake of rating and promoting workers.

As suggested before, job analysis is an indispensable prelude to the construction of a trade test, for only by charting the components of a job can a test be prepared that measures proficiency.

On the side of production in industry, also, analysis is regarded as of paramount importance. Through it comes the discovery of wasteful operations, some of which are connected with machinery, others with the worker. In the case of the latter, fatigue may be reduced and exposure to dangerous accidents may be minimized.

It is likewise useful in the setting up of standards of performance—the standard day's task—and the establishment of equitable wage scales. It may be used in the accurate computation of costs and the estimation of new contracts. In short, all the ends which have been served by time and motion study in industrial management may be served by trade and job analysis.

In spite of the fact that they are not immediately directed toward the problems of curriculum building, the results attained by analysis made for these various purposes are quite readily applicable by a teacher of the trades. An instructive example of this comes from the experience of the British Industrial Research Fatigue Board, which was organized during the war to promote better knowledge of the relations of hours of labor and of other conditions of employment, including methods of work, to functions of the human body. Among the industries in which investigations were carried on was that of chocolate dipping. Investigation showed that certain wasteful and fatiguing operations could be replaced by others more economical and less fatiguing. The newly-discovered co-ordinations were then embodied in a training scheme, according to which new operators were instructed. Thus the analytic study, though started for a different purpose, pointed the way to more efficient methods of instruction in the trade (9).

JOB ANALYSIS A CONTINUOUS PROCESS

No job is ever completely analyzed. Practically all investigators agree on this. Occupations are evolutionary in their nature. New ones are arising; others are dying off; new processes are being invented, new machinery and new materials. Accordingly, the ideal that should guide the analyst is: there is always room for improvement in methods of work; there are always new facts to be discovered; there is always room for improvement in methods of learning.

SUMMARY

This discussion has aimed to furnish a brief statement of what job analysis is; how it is carried on and how its results are used in vocational curriculum building. It has cited several successful attempts that have been made by the best methods of gross analysis available. It has pointed out that a still more minute analysis remains for future development and has cited examples devoted chiefly to a study of psychological factors. Attention has also been called to the fact that job analysis is being used for purposes other than curriculum building, and that from these related studies

may come discoveries of great significance for the teaching of vocational subjects. Though the treatment of all these phases has, of necessity, been brief, it is hoped that enough has been said to inspire teachers and investigators in the field of vocational education to take a broad view of job analysis, to keep closely in touch with its various phases, to study and apply the available reports on the subject. Only so can they elevate the acquirement of vocational skill from the plane of wasteful undirected learning to that of effective directed activity which is the ideal of the modern demand for the scientific study of education.

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CHAPTER IV

INDIVIDUAL INSTRUCTION IN THE VOCATIONAL SCHOOL

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INTRODUCTION TO THE PROBLEM

Present-day thought and practice in the field of elementary and secondary education are distinctly in the direction of adapting subject matter and procedure to the pupils' individual needs and capacities. To verify this, it is only necessary to note the contents of the programs of the various educational conventions or gatherings or to glance through the announcements of regular or summer courses in the many schools of education.

The junior high school is one of the foremost of the numerous institutions attempting to offer diversified curricula. Its steady growth is due to a recognition of the fact that public education can no longer be extended in terms of formalized mass education but must be developed in terms of the needs of individuals. Hence today there is found, usually beginning at the seventh year, a school organization that provides for the needs of both sexes—a departmentalizing of the school program and an offering of elective courses in several fields. The function of a well organized junior high school is to introduce the child to the occupational world in a comprehensive manner, to assist him in determining his future occupational activities and to bring to him that kind of an education that will help him directly and indirectly in his future occupation. This movement in education not only comprehends the child preparing for college, but it also offers educational opportunities for those not so fortunate who must enter early upon wage earning careers in industry, commerce, agriculture, or homemaking.

The recent movement towards applying educational measurements and tests to school children is another indication of the trend

of educational development. This scientific testing is an effort to classify and sort children into groups according to like capacities, desires, and interests. The proper classification of pupils will enable teachers to offer the instruction that will be of most benefit to groups having varying abilities and interests. It will pave the way for special classes for subnormals, other classes for those of average ability, and still others for the very bright individuals. All these efforts point to very specific tendencies in educational progress. These tendencies are all parts of a movement to provide in the most effective way instruction and guidance for the individual child. The trend of thought and practice is away from thinking in terms of many hundreds of children and toward the needs of this child and that child.

Vocational education is a phase of education that offers an unusual opportunity for the development of procedure and practice that will serve individual pupils. The comparative newness of vocational education and its consequent lack of traditional practices is a decided advantage to those teaching in this field who are attacking the problem of organizing and using individual instruction material. This is especially true in the case of the continuation school problem, where the need for such material is acute. The success of the continuation school is dependent upon the effectiveness of individual instruction. Vocational teachers have an opportunity for pioneering in educational procedure that will eventually modify and improve all classroom technique.

The discussion which follows deals with the continuation-school problem. It illustrates a practical, present-day situation with its numerous organizations and instructional problems. Implications should be drawn during the entire discussion to similar problems in the junior and senior high schools, in the evening schools, and in the elementary grades.

THE CONTINUATION SCHOOL — AN EXAMPLE OF THE PROBLEM OF INDIVIDUAL INSTRUCTION

A. An Analysis of the Predominating Individual Differences

Chronological age and physical condition. The continuation-school boy and girl range from 14 to 18 years of age and in many

instances have their full physical stature. They are no longer children and should not be considered so from the physical standpoint. All degrees of soundness of physique will be found among their number, as will be found in any other large group of people.

Mental age and ability to learn. Within every continuation school will be found students of different degrees of mental ability. It is true that this condition also prevails in the full-time school, but not to the degree to be found in the continuation school. The student who is not able to make progress, the pupil whose financial aid is needed in the home, the large numbers that have lost interest in the regular school work, all pour into the continuation schools.

School experiences. Among the numbers of young people appearing for further instruction in the continuation school will be found those with a fourth-grade education; others with one, or two, or three years of study in the high school; some with two or three years of work in the school shops or laboratories of commercial classrooms; others with an elementary-school education received in a rural school where opportunities for work in the special subjects were not available.

Places of employment. The boys and girls in the continuation school are scattered broadcast through the occupational activities of the community. Some have selected wisely, but the majority have done so blindly. Many of their jobs have avenues leading up and on; others have the most limited occupational opportunities. Diversity of occupation among the membership of the continuation school must receive recognition.

Home conditions and environment. The mark of home and the environment is upon every child in the school. A diagnosis of the membership of any school or class readily discloses that the problem of treatment is not a mass undertaking, but an adjustment of individuals. They do not all need the same instruction in English, in mathematics, in personal hygiene, or in any other subject at the same time.

Irregular periods of entrance to the continuation school. The membership of any continuation school is not stable. The receiving and discharging of students is constantly in operation. This con-

dition affects the membership of individual classes and adds to the responsibilities of the teacher.

Interests and aptitudes. Interests and aptitudes among the working boys and girls attending the part-time schools are more divergent than in the elementary school and decidedly more pronounced and evident than in any of the full-time schools or classes. These young people are not as amenable to accepting mass instruction as the full-time students, nor is it desirable to attempt to offer instruction to them in that manner.

Summary. The fact that these boys and girls are not in attendance upon full-time instruction is clearly indicative that the instruction offered in the full-time school under the older methods has not been entirely successful. Is it not rational to draw the conclusion that the status of these children, approaching maturity, observant, and alert to all the activities in the community about them, their personal ambitions and desires giving vent to individual expression, points to a real need for a general overhauling of classroom methods and the placing of the emphasis on the individual needs?

Further, is it not rational to assume that the facts that children in the continuation school are less homogeneous than the children in the full-time school; that there are greater differences in chronological age and physical condition, mental age and ability to learn, school experiences, kinds of employment, home conditions and environment, irregular periods of entrance to continuation school, interest and aptitudes—that all these conditions point to the imperative necessity for individual guidance and assistance?

B. Classification of the Pupils

The grade completed as the basis. The grade completed in a regular school is not a safe basis for the classification of pupils in the continuation school. The wide variance of standards on the part of teachers in grading makes this grading unreliable and therefore not desirable for use in the continuation school.

Employment as the basis. Occupations in which children are employed that have educational and promotional opportunities

offer one of the most effective bases for classification. This method will group children of similar major interests and provide a form of motivation that will insure progress.

Tests and mental measurements. These devices are being used very effectively to determine certain distinct abilities. The application of this scientific method is doing much to secure a homogeneity of classes, and as a result, more effective teaching.

Summary. Mental tests, measurements, the previous school record, and the use of occupational information are invaluable agencies in the problem of classification. Added refinements and perfected technique in the use of these agencies still leave with us the problem of the individual with his multiplicity of interests, desires, ambitions, and special aptitudes. Scientific classification has but one major end and that is—teaching that reaches and serves the needs of individual pupils. The individual must not be submerged; he must be the unit for whom all instruction is organized and given.

C. The Subject Matter of the Continuation School Curriculum

1. *The Occupation as a Partial Source of Subject Matter*

A major portion of the subject matter may be very effectively developed from the various occupational fields. This subject matter will embrace not only the manual aspect, but also those phases of English, civics, hygiene, mathematics, history, economics, drawing, and design that may be naturally correlated. This method of approach to the interests of the working child brings very vividly to their attention the fact that the instruction in a continuation school is very different from the instruction in the full-time organization.

2. *Individual Needs of the Working Children*

Attention has been called to the range of variability existing among the pupils of every continuation school. In the face of this situation can we continue to ignore the fact that each child needs assistance in his place of employment, that each needs in varying degrees assistance and help in matters of health education, use and appreciation of the English language, use of the simple mathematical computations, and a working knowledge of the civic and

social duties and responsibilities? Any assumption that all children need the same instruction at the same time in any continuation school is a fallacy and without pedagogical foundation of any kind.

3. The Interest Factor in Continuation-School Instruction

The majority of children in attendance upon part-time schools have left the full-time classes at the earliest possible legal age. A fundamental reason for this elimination is lack of interest. If the full-time organization failed to a large degree to secure the interest of the adolescent boy and girl, is it wise to proceed along similar lines in organizing and offering instruction in the newer field? Have we not had one of the most vivid illustrations of what mass instruction will accomplish? Are we to follow the method that we know was successful in eliminating pupils, or are we to profit by the experience of the full-time school and develop subject matter and a method of instruction that are primarily and fundamentally based on individual needs and interests?

4. Present Text Material Not Suitable

Existing texts and reference materials are not adapted in their present organization for the most effective use in continuation school classes. The material itself is entirely reliable, as far as it goes, but is not in the form that sets the part-time school pupil at work, holds him to it, and is immediately usable in a civic, social or economic way.

5. Type of Subject Matter Best Adapted to the Unit Instruction Organization

All subject matter lends itself very readily to organization in the form of units of instruction. The only debatable issue is where and under what conditions the units of instruction may be used most effectively. Experience in the use of this form of organization indicates that it may be most effectively used with an entire class when the subject matter is general in character and not dependent upon material that precedes or follows. The subjects of civics,

social relations, hygiene, and phases of every vocational subject that are general in character are examples.

Subject matter of any kind that is dependent upon mastery or knowledge of preceding units lends itself to an organization and use with individuals or small groups. All forms of shopwork or laboratory instruction in home-making, industrial and commercial subjects, and much of the instruction in mathematics and English may be most effectively organized and taught through the medium of units of instruction used with the individual pupil or small groups of pupils.

6. *Summary*

The subject matter in the continuation schools cannot be the same material that is offered in the full-time schools. Many of the children left those schools for the avowed purpose of avoiding the existing type of subject matter and the existing methods of teaching it.

The young wage earner's employment and his immediate surroundings should be the source from which much of the subject matter taught in the continuation school will be drawn. This source will provide material that possesses interest and a very large measure of immediate usefulness.

Few existing textbooks have been prepared to provide that kind of instruction, and consequently there is need for preparation of much new material or a re-arrangement of existing subject matter.

D. The Teaching Problem in the Continuation School

1. *Principles of Teaching and Their Application in the Continuation School*

Teachers of special subjects in the curriculum would have us infer in numerous instances that the accepted principles of teaching do not apply to their practical field. This point of view is in total disregard of the fact that *principles* are common to all subjects, and that it is *method* that may vary with the different types of work.

Furthermore, it must be recognized that if principles of teaching are worthy of consideration in giving class instruction, they are equally worthy and necessary in connection with individual

or group instruction. Many attempts have been made in the past and are constantly being made to-day to use individual methods of teaching without observance of the most fundamental of principles. This was undoubtedly one of the major causes for the failure of the individual method in commercial education that was advocated a number of years ago. It failed because the teachers did not know and use the most elementary principles of teaching with the individual members of their classes.

2. The Distribution of Pupils in Classes According to Ability

Every educational study ever conducted to determine the achievement and progress of pupils in school subjects has shown that within each class there is a grouping that follows approximately a normal distribution curve. This variation is absolutely disregarded in many classrooms; the common practice is to offer instruction to the class as a whole. Under this method from one-fourth to one-third of the students are not receiving the instruction from which they will derive the greatest profit.

In a continuation school the range of variability is marked. It is only necessary to recall the predominating individual differences previously mentioned to gain an idea of the actual situation confronting almost every continuation school teacher. Teachers in full-time classes may be able to disregard the twenty to thirty percent of their pupils because it is the traditional procedure, but this cannot be sanctioned in any continuation school. Every hour spent by a pupil in a continuation-school classroom should be a full sixty minutes of profitable and appreciated educational progress.

3. Abilities of Pupils and Class Instruction

The traditional practice of 'spraying' instruction on a class as a whole is too well known to need extended elaboration. Every teacher recognizes and knows from experience that it is impossible to keep the members of any class together. They may start out together on a new subject on a Monday morning, but by Friday night there will be found distinct groups from the standpoint of progress among the members.

In the face of this situation the teacher must adopt a method of procedure that will reach each member of each of these groups. Teachers will find that running through every school subject, and this is especially true of the vocational subjects, there is a core of general subject matter, many parts of which can be offered to a class as a whole. This suggestion, carried into practical application, means that there is a place, probably at the beginning of each class period, for a short, well-planned, general class discussion of a small portion of the core of subject matter.

Teachers should not be deceived about the class discussion and for one moment believe that the working boys and girls in the part-time classes are especially interested in a lecture by the instructor or a recitation by some three or four members of the class. These students are keenly discriminating and will be satisfied only when they receive instruction that they know is of immediate benefit to them.

4. The Factors of Interest and Self-Activity in the Continuation-School Classroom

The interests of the individual pupil are the basis of his educational progress. A pertinent and proper question is: do we get the interest of the individual pupil when problems are discussed that do not touch his life, that are too far advanced or too elementary? Inability of the pupil to see and appreciate the value of the daily instruction in terms of his own situation means ineffectual instruction.

Students are most interested when they are at work upon their own personal problems, and this is especially true when these problems are presented to them in the form of challenges that set them upon their mettle. The pupil attains to knowledge, not by having it forced upon him, but by taking it of his own volition. He should be constantly encouraged to instruct himself and work independently. The teacher is the co-operator and remover of insurmountable difficulties only and should resolutely endeavor to render his services unnecessary. This is especially applicable to all of the instruction offered in a continuation school or class.

Accepting the most basic of the principles of teaching—that interest is the compelling personal force that sets the individual at

work and that it is only through self-activity that individual growth and development is brought about—how may the use of class instruction that reaches only a part of any class be justified as an effective method of teaching?

5. The Group Method of Teaching in the Continuation School

Organizing the class on the basis of groups made up of pupils whose interests and capacities are somewhat similar is the first step toward meeting the specific needs of the individual members of the class. This method will enable the teacher partially to observe the fundamental principles of teaching.

The average classroom teacher sees in the group method of instruction an impossible teaching situation. How is it possible to keep three, or four, or five groups within one classroom profitably employed? It is granted that, with the present organization of teaching material, it is an impossible task. It is absolutely necessary that instructional material be so prepared that each of these groups will progress as rapidly as it profitably can, remembering that group progress is nothing less than the progress of each pupil in the group.

6. The Individual Method of Teaching in the Continuation School

Public funds are provided, schools established, and teachers employed for the distinct purpose of preparing the individual to meet his daily responsibilities in a democratic society. This means that the individual is the unit for whom the organized instruction should be prepared.

This standard will require that each teacher know the facts concerning each pupil and on that basis prepare and offer the instruction that is needed to bring the student in closer accord with the civic, social, and economic demands that he is called upon to meet. This means that each pupil's deficiencies are being lessened, his aptitudes are being developed, his desirable interests encouraged and, in general, right habits are being firmly established.

Under this method of instruction the pupil realizes the presence of the personal element. His identity is not submerged and lost in

the mass. With this realization of individuality comes a consciousness of the value of the instruction, and an interest in the subject matter because it touches him, and, finally, the self-activity that results in development and growth.

Mass instruction has not brought this about for all pupils. Is it still desirable to employ exclusively the method that is known to have failed with many, or is it timely to consider such modifications of our methods as will more nearly serve all?

7. *Summary*

The principles of the teaching-learning process are equally applicable in all instruction, whether vocational or general. The stimulation of interests, the meeting of needs, and the development of abilities is not a mass problem, but one of individual boys and girls. Class instruction will not serve most effectively in the continuation school, nor will group instruction fully meet the established standard. To present that kind of subject matter and to employ that method that will make an immediate appeal and secure an involuntary response is the standard of instruction to be attained.

E. The Unit Instruction Method in the Continuation School

1. *Defining the Method*

The factors and conditions confronting the teacher in a continuation school have been presented somewhat in detail. The limitations of certain methods and the non-adaptability of others have also been developed in the light of the continuation-school problem. This immediately leads to a consideration of the methods that can be employed that will assist in meeting the instructional demands of the continuation school. These instructional demands are neither fanciful nor remote, but decidedly in our midst. Face to face with this insistent demand that the instruction in our continuation-school classes shall be more effective than that offered in full-time classes, the unit instruction method of teaching was evolved.

The unit instruction sheet is distinctly a teaching agency to supplement the efforts of the teacher and in no case should be used to supplant the instructor. It is one unit of a body of organized

teaching material that has been prepared for pupils to use under conditions that will insure the greatest amount of directed individual progress. It is specifically an agency that provides educational work for the pupils, according to their varying abilities and interests, for the duration of a class period. It is a means of attaining "self-education through purposeful activity."

The unit instruction idea and the unit instruction sheet are not presented as new ideas. The entire plan in one form or another has been a part of good educational practice for a great many years. The form under discussion is a composite development and represents the best of the instruction methods employed by the correspondence schools, the best practice used in school science laboratories involving the use of manuals, and the idea of the factory job sheet. A fusion of certain elements of all three plans, together with an observance of pedagogical principles, resulted in the present idea of the unit-instruction sheet.

The unit instruction idea is not a device, but distinctly a method of teaching. Neither is it a teacher's lesson plan, but an assignment of selected educational problems to be placed in the hands of the pupil for solution. Under this method of teaching, every boy and girl progresses as rapidly as ability will permit. The teacher does not find it necessary to have recourse to that 'marking time' device, the supplementary assignment. It is not advocated that all group or class discussion should disappear under this plan, but whenever it is used, the teacher should be certain that each member of the class or group will receive full benefit. Using this standard in a critical way will almost entirely eliminate the present form of class teaching. Under these conditions, a unit instruction sheet might be used with an entire class or with groups.

2. *Essential Aspects of the Unit Instruction Method*

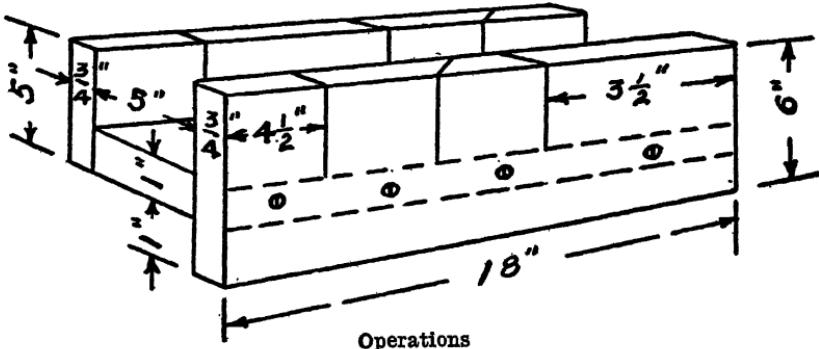
The unit instruction sheet is the student's assignment of work. A most important factor on each sheet is the statement of the objective of the unit. It must be so worded in the language of the pupil and in such a clear and concise manner that it is readily comprehended and results in the taking up of the assignment without loss of time.

All assignments placed on the sheets must also be very specific and carefully worded. The assignments should be of such a nature and in such form as to result not only in doing, but also in thinking. An observation of this principle will eliminate any tendency to prepare factory job sheets.

First instruction sheets placed in the hands of students may properly be rather specific, but succeeding sheets should be so prepared as to require the student to assume the responsibility for working out his own procedure. Yet teachers should not permit students to guess at procedure, but should always be available to render the necessary assistance. Assignments to sources of information in text and reference material should be a part of every unit instruction sheet. The type unit instruction sheet that follows illustrates the essential features of the method.

UNIT INSTRUCTION SHEET
PART-TIME OR CONTINUATION SCHOOL
 Course: Building Trades—Carpentry, Unit No. 2
Objective of the Unit

Assemble the miter box and make the 45° and 90° cuts.¹



Assignment for student. Prepare for your note book the list of processes necessary to perform each of the following operations and have the approval of the teacher before proceeding:

1. Locating centers of screw holes.
2. Boring and countersinking screw holes.
3. Assembling sides and bottom.
4. Laying-out the 45° and 90° cuts.
5. Making the 45° and 90° cuts.

Read: *Trade Foundations*, Section IV, par. 17, 18, 20, 21, 54, 55, 57.
Essentials of Woodworking, Ch. IV.

¹The preceding unit involved the dressing of stock to dimensions.

Related Drafting

1. Make a complete three-view mechanical drawing on 9"x 12" drawing paper of the miter box using a scale of 3" to 1 foot.

Read: *Mechanical Drawing for High Schools*, pages 3, 4, 5, 6, 7.

Trade Science

Prepare for your notebook:

1. Explain briefly what is meant by plain sawed lumber; quarter sawed lumber.
 2. Explain the effect of the method of sawing on the warping of lumber.
- Read: *Trade Foundations*; pages 185, 186.

Vocational Guidance

Prepare for your notebook:

1. Explain how people learn the trade of carpentry.
 2. What does an apprenticeship mean to you?
- Read: *Trade Foundations*; page 83.

Trade Mathematics**Preliminary Drill Problems**

Note: The drill problems are prepared for the students not ready to take up the job problems.

1. Give the decimal equivalents of the following:
 $\frac{1}{16}$ "; $\frac{5}{16}$ "; $\frac{9}{16}$ "; $\frac{13}{16}$ "
2. Add the following dimensions as found on the rule:

$1 \frac{3}{16}$ "	$6 \frac{7}{16}$ "	$4 \frac{5}{16}$ "
$2 \frac{5}{8}$ "	$5 \frac{1}{16}$ "	$4 \frac{3}{4}$ "

$$\begin{array}{r} 7 \frac{13}{16}" \\ 4 \frac{3}{4}" \\ \hline \end{array}$$

3. Subtract the following dimensions:

$$\begin{array}{rrr} 1 \frac{13}{16}" & 6 \frac{7}{16}" & 7 \frac{3}{4}" \\ 1 \frac{1}{4}" & 5 \frac{1}{16}" & 3 \frac{13}{16}" \\ \hline \end{array}$$

$$\begin{array}{r} 11 \frac{3}{4}" \\ 7 \frac{5}{16}" \\ \hline \end{array}$$

4. Divide the following dimensions into equal parts:

$$\begin{array}{l} 10 \frac{1}{2}" \text{ divided by } 6 \\ 9 \frac{3}{4}" \text{ divided by } 3 \\ 7 \frac{7}{8}" \text{ divided by } 5 \end{array}$$

Trade Terms

Place in your notebook the meaning of the following terms:

1. Assembling
2. Countersinking
3. Toe-nailing

Tools and Materials

Prepare for your notebook:

1. Five important facts concerning basswood.
2. Name three tools that may be used to lay out a 45° angle.
3. Why is it always desirable to bore the holes for a screw slightly larger than the diameter of the screw?
4. What does the term, $1 \frac{1}{2}$ ", number 10, flat head, bright wood screw mean?

Read: *Trade Foundations*; pages 198, 290, 291.

Job Problems

1. Add the different dimensions on the width of the miter box and give the over-all width.
2. Four screws are used on the sides of the miter box, the first ones are to be placed $2 \frac{1}{4}$ " from either end; how far apart will the others be if spaced equally?
3. If the cut for the 45° angle is started $3 \frac{1}{2}$ " from one end of the box, how far will the cut be from the end on the other side of the box under construction?

Safety and Hygiene

Prepare for your notebook:

1. Why is it dangerous to pass a finger over the head of a screw after it has been driven home?
2. Enumerate five things that you are doing to keep in good physical condition.
3. Indicate three more things which you should be doing.

English
Preliminary Drill Assignment

Note: To be used where student is not ready for regular work.

1. Study each of the correct forms below and write a sentence containing it.

Correct Use

I did
They did
They were
We saw
The boys saw

Incorrect Use

I done
They done
They was
We seen
The boys seen

Regular Assignment

Read: "The Toll of Big Timber" in *The Worker and His Work*, pages 141-146, and prepare a written description of approximately 200 words of the felling of one of the large trees.

Civics, Industrial and American History, and Economics

Note: This suggested material should be used for class or group discussion.

1. Name and discuss three provisions that the State has made for the welfare of young workers.
2. Discuss in detail the reasons for the State enacting laws to provide for the welfare of young workers.

3. Responsibility of the Teacher

The unit instruction sheet is specifically for the purpose of supplementing the efforts of the teacher, thus freeing him to render greater assistance to individual members of the class. The sheets cannot be distributed to students in an indiscriminate manner, but should be allotted on the basis of their individual needs, which have been very carefully ascertained at some previous period. Meeting the needs of individual pupils does not mean the preparation of individual sets of instructional material in every case or even in the majority of cases. The classification of pupils into groups on the basis of individual needs will enable the teacher to rotate sheets successfully. Following the distribution, the teacher then has the problem of individual teaching, close follow-up of each student, careful checking of results, and a recording of accomplishment.

4. Summary

The primary purpose of the unit instruction method is to provide, through carefully organized and planned assignments of edu-

cational work, in terms of individual needs, interests, and aptitudes, for the fullest possible progress of each boy and girl without undue loss of time or effort. It is not planned for use in starting an entire class together or for use in attempting to keep them together. It is planned entirely with the realization that the boy or girl is the unit of instruction.

F. General Summary

1. *The Continuation-School Pupil*

He is a child in many ways, but as a wage earner he is daily encountering experiences beyond his years. He is commencing to know and appreciate the value of education and special training; he knows his own shortcomings, and knows when he is getting what he needs. He is more discriminating and exacting in his demands than the high-school child; he is not like every other child in the continuation school and refuses to be made so. The sooner the continuation school finds out his needs and administers the treatment that his needs require, the sooner will the movement be on a firm foundation.

2. *The Subject Matter of the Continuation-School Curriculum*

Recognition and acknowledgment of the range of individual differences among the pupils of every continuation-school forces an organization and preparation of teaching material that will immediately meet the individual needs. Occupation, physical and mental condition, interests and aptitudes are all factors that must be considered in the subject matter for each boy and girl. Few texts and only a limited amount of reference material are available to serve the needs of these children. It would be extremely unwise and unfortunate to attempt to shape the instruction around existing material. The immediate problem is to collect the available facts from every source and organize them in such a manner that pupils will be able to use them with interesting and telling effect.

3. *The Teaching Problem in the Continuation School*

The question should be immediately raised: are we in accord that it is the business of the continuation school to provide such instruction as will permit each individual pupil to progress as

rapidly as he is able and that four hours of attendance upon classes shall be a full 240 minutes of needed and usable instruction?

If this objective is accepted, will the results of many scientific studies also be accepted that show that within every class there is a distribution of ability and achievement that follows approximately a normal distribution curve? If this condition exists in the full-time classes, it is known that the diversity is much more extended in the continuation-school classes. In the face of this existing diversity in the continuation school, is it rational to assume that instructional material prepared for the use of a class will be fully beneficial to all, or are the conditions being viewed frankly and recognition given to the fact that the class method will probably reach less than fifty percent of the pupils and the remaining members will receive little or nothing? It is not physically or mentally possible for any teacher to give the needed help, encouragement, and assistance to an individual pupil through the class method.

Further, is it reasonable to expect that under classroom conditions, where only a limited number of the pupils profit or are even touched, that interest followed by self-activity will prevail? All educational progress is conditioned by these two factors, interest and self-activity.

Teachers, supervisors, and directors in continuation-school work have no alternative. They must provide a type of organization, a kind of subject matter, and a method of teaching that will immediately result in needed and desirable changes in each boy and girl in attendance upon continuation-school classes.

4. The Unit Instruction Method in the Continuation School

The unit instruction method is being advocated and strongly urged for use in continuation-school classes because it provides an educational task for each child according to his or her needs. It provides assignments closely associated with their interests, provides needed and appreciated work for the full time of each day, and permits of progress according to individual ability. This method removes all hampering restrictions, and the child establishes his own stride in his own pathway. It is but a recognition that the boy or girl is the unit of instruction.

The responsibility of the teacher is increased many fold under this method. The teacher must study, advise, encourage, assist, and appraise each boy and girl, instead of administering a general treatment to all. Abuse of this method is readily possible, but it should be recalled always that the method is based on fundamental principles of psychology and teaching.

5. Implications for Other Forms of Education

Individual differences exist in every group of students. This condition demands of the educator that he provide that form of instruction for the members of the group that will insure progress according to individual needs and ability. This situation places the responsibility directly upon the teachers of preparing units of instruction for much of the subject matter and of applying methods that will meet the actual classroom situations prevailing in junior and senior high schools, elementary schools, vocational schools, and evening schools. The fact that different types of schools represent a diversity of subject matter should not modify the generally accepted standards of accomplishments that public education is striving to attain or effect the employment of the most efficient and effective methods in the teaching-learning process.

CHAPTER V

WHAT A FEW PART-TIME OR CONTINUATION SCHOOLS ARE DOING

A. INTRODUCTION

ANTHONY M. GOLDBERGER

Principal of Continuation School, Pittsburgh, Pennsylvania

Probably no field of educational work to-day offers greater opportunity for the development of new content in the curriculum and for new methods of instruction than does the part-time school. Two factors contribute more than the others to make this so. In the first place, the part-time school is so new that it is practically unhampered by traditions; and in the second place, it is almost entirely independent of the restraint imposed upon other schools, which have to conform, partially at least, in their curricula to the entrance requirements of the higher schools for which they prepare. In the light of our knowledge concerning the reasons why pupils leave the full-time school—their dislike of school, the failure of some in school studies, and similar reasons—a radical change in content or method or in both in the continuation school would seem to be indicated as a fundamental necessity before successful work can be even attempted.

It is, therefore, of particular interest and value to note how a few of the part-time schools are experimenting in these particulars. Only a meager sampling can be presented here. A great many others, as valuable and as interesting in some respects, are being conducted in other communities.

The responsibility of the teacher is increased many fold under this method. The teacher must study, advise, encourage, assist, and appraise each boy and girl, instead of administering a general treatment to all. Abuse of this method is readily possible, but it should be recalled always that the method is based on fundamental principles of psychology and teaching.

5. Implications for Other Forms of Education

Individual differences exist in every group of students. This condition demands of the educator that he provide that form of instruction for the members of the group that will insure progress according to individual needs and ability. This situation places the responsibility directly upon the teachers of preparing units of instruction for much of the subject matter and of applying methods that will meet the actual classroom situations prevailing in junior and senior high schools, elementary schools, vocational schools, and evening schools. The fact that different types of schools represent a diversity of subject matter should not modify the generally accepted standards of accomplishments that public education is striving to attain or effect the employment of the most efficient and effective methods in the teaching-learning process.

CHAPTER V

WHAT A FEW PART-TIME OR CONTINUATION SCHOOLS ARE DOING

A. INTRODUCTION

ANTHONY M. GOLDBERGER

Principal of Continuation School, Pittsburgh, Pennsylvania

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B. ROCHESTER, NEW YORK, CONTINUATION SCHOOL

E. A. ROBERTS
Principal

A continuation school was opened in Rochester in September, 1920, requiring only pupils between 14 and 15 years of age to attend. Two hundred and thirty-four were registered. The present enrollment is about 4300 and includes employed children under 17 years of age. When the law is fully in force in 1925, it will affect all children under 18 years of age. About 5500 will then be required to attend.

Few boys and girls who withdraw from the upper grades of the grammar school retain an active interest in the lines of work begun in school. This is serious for whatever mastery may be theirs is at best but a mastery of the tools of education.

They leave school at just the time when the school could best help them to appreciate the great ends for which these tools might be used.

The continuation school (as its name implies) continues the instruction of employed children for not less than four hours each week during the regular school year.

The related academic subjects in the continuation school take up about half of the time of each class and are grouped under four main headings: mathematics, English, civics, and hygiene.

Inasmuch as Rochester contains a large number of industries of various types, it is, of course, necessary to make a survey of juvenile employment in order that one may know the proportion of children working in the various industries.

It has also been of value to make a survey of the students registered in the school in order to show the total number leaving any one school and the grade last attended. This has been of much assistance in grouping as far as possible according to grade.

The following courses are offered at the present time in the Rochester continuation school:

BOYS		GIRLS
Machine Shop	Drafting	Home-making
Electricity	Cabinet-Making	Dressmaking
Sheet Metal	Patternmaking	Office Practice
Masonry	Printing	Typewriting
	Instrumental Music	Instrumental Music
Office Practice	Bookkeeping	Sewing
Typewriting	Retail Selling	Millinery
		Bookkeeping
		Retail Selling

The ultimate success of any continuation school depends largely upon the ability of those directly responsible to deal with each pupil as an individual case. Furthermore, each case may represent problems new and complex. It is not only the duty of teachers to conduct their classes but they also have an additional duty, namely, that of acting as an educational and vocational counsellor and thereby determining the individual needs of all pupils in their classes.

The problems involved in meeting the needs of pupils in the continuation-school classes can not be solved with any reasonable amount of satisfaction unless considerable time is spent in group meetings of the teachers of various departments where proper consideration is given to the methods to be employed in conducting such classes of widely varying interests. In such meetings teachers may contribute materially to the general fund of information. Thus, the pressing need for new and interesting material can be supplied. It is necessary that these meetings be confined to members of separate departments and not be a combination of several groups. Meetings of mixed groups may result in a lack of interest and an inclination not to contribute to discussions.

A rather important factor to be considered is that of placing all such material in the form of individual instruction sheets in a so-called "clearing house" where it is available to all members of the teaching staff, thus eliminating much duplication of time, effort, and content.

C. JOHNSTOWN, PENNSYLVANIA, CONTINUATION SCHOOL

JAMES KILLINS
Director of Vocational Education

Most of these children quit school to get working papers. One of the aims which we keep in mind is to develop the feeling that schooling is not restricted to school houses. We try to emphasize that we continue to learn through a lifetime, that there should be no stop, merely a change. Hence we plan the use of libraries, correspondence courses, evening unit courses, etc. The continuation-school time is short—it will end at sixteen. We want our boys and girls to continue training themselves. The routine of regular school fitted them for the next step—we recognize that the step is *Life*.

My experience, apart from the war-time years, shows that not two percent of the boys are engaged in industrial trades. It could not be expected below sixteen. Many of them have no definite vocational intentions. Our next big aim has been to help the pupils find themselves. Our vocational guidance, however, has this sympathetic angle; that we recognize capacity limits and that many of the less desirable and menial occupations of life can conscientiously be advised for certain pupils. We are prone to place too high a standard of attainment and instead of lifting up, merely befog and interfere with the life program of some weaker member of society.

The next aim is merely opportune pedagogy. Where has there been such a chance to tie up school instruction with actual occurrences, with life as it is experienced? Hence we try to make everything have a direct significance to the child. Arithmetic, civics, and English, no matter under what titles they are given, are always actual or hypothetical conditions dealing with continuation-school boys or girls, their parents or friends, their home or environment.

Most of the good work is done on a project basis, where pupils are not restricted to bells, periods, subjects, but where they spend a day or part of a day solving something which *they want to solve*. Our success is measured by our ability to get these boys and girls

to doing things continually because they want to, not because they have to do so.

We have unit courses along such lines as manicuring and hair-dressing, manners, office work, messenger service, retail selling, and many other fields. Some of these short courses consist of ten lessons, some more. Some terms we do not give them; other years we add to them. We have not reached any place where we prescribe in advance for the ailments of all continuation-school groups —past, present, and to come. Quite often a group suggests an entirely new approach in order to cover English training, civic, and social improvement. It is the only place in the educational program where you can finish up to any degree the few weeks that end school days for the great percentage who quit.

D. CHICAGO, ILLINOIS, CONTINUATION SCHOOLS

A. G. BAUERSFIELD
Supervisor of Continuation Schools

Chicago offers an interesting example of diversification of curriculum to meet the needs of the particular communities in which the continuation schools are located. In the continuation department of the Washburne School, the 'Cycle Plan' is carried out. This plan gives a boy from fourteen to sixteen years of age an opportunity to test out his inclinations and abilities for vocations by giving him approximately twelve weeks of shop work in a number of different shops.

The South Division Continuation and Automobile School is located near the heart of 'Automobile Row,' on South Wabash Avenue. Courses in various classifications of automotive mechanics are offered for adults and for continuation-school pupils.

Commercial and home economics courses are also given in both the continuation schools and in the evening schools, from the standpoint of vocational training. The Jones Continuation School, for boys and girls employed in commercial work, is located near the loop district, and offers courses in filing, bookkeeping, calculating machine work, stenography, business English, and general office routine.

The Herriet Winchell Continuation School is devoted entirely to the instruction of girls and corresponds to the Washburne Continuation School for boys. Girls employed in various millinery houses, department stores, etc., are given courses correlated with their occupational activities, and in addition, considerable emphasis is placed upon the work in home economics, hygiene, and civics.

There are also seven continuation schools located in the packing house district, at the Federal Bank, and at the Telephone Exchanges. Space for these schools is donated by the companies who employ the pupils on a part-time basis.

E. SCHENECTADY, NEW YORK, CONTINUATION SCHOOL

CHARLES W. CLARK
Director

We look upon the educational product of the city of Schenectady as formed of two classes of people; those who will graduate from the high school and go further into executive or professional positions, and those who will terminate their fundamental education short of a high-school education and enter into some life work without any specific preparation. The city of Schenectady has been fortunate thus far in having as an integral part of its two large industries very effective trade apprentice courses. Into these courses a large number of the boys who leave school before high-school graduation naturally drift, although the General Electric Company bids strongly for high-school graduates. These apprentice courses, however, do not in any full sense provide any occupational preparation for the large number of pupils leaving school each year, and to meet the needs of this group we believe the continuation school, or part-time school, a very necessary, and a vital agency.

As a matter of fact, it is at the present time the only school in the system which offers any vocational guidance work, and so is meeting a very real need. While we recognize our responsibility in a measure to continue the education of the minors who come to us, we specifically connect that education with practical occupations, and we count as our major objective the guidance, fitting, and placing of these minors vocationally, and the development in them of desirable traits of American citizenship.

Proceeding logically, we have organized our courses of instruction on the basis of the prevailing occupations in the city. Thus the metal trades and the building trades are most largely represented. We are offering courses at the present time in general woodworking, carpentry, cabinet-making, sign painting, blue-print reading, machine shop work, drafting, salesmanship, clerical work, and typewriting for boys. For girls, we have courses in retail selling, clerical work, typewriting, homemaking, dressmaking, and millinery. Believing that the four-hour period of continuation-school work is a period given to us to utilize most fully, we make it a

four-hour period of real opportunity to the pupils in our school. We believe, in the first place, that they have no knowledge of the nature of occupations nor of the occupational opportunities of the community. Hence, we offer two kinds of courses in each of the occupations for which instruction is given. The first is an 18-weeks 'try-out course,' which gives them an opportunity for practice in the fundamentals of the occupations, and the second is a definite occupational preparation course, offering the fundamentals of the occupation, but more detailed than the try-out course permits.

One of our faculty is appointed to interview and record the history and vocational preference of each entering boy. In accordance with his preference, he is placed in a try-out class, and if his preference is found to be based on natural ability, he is transferred to an occupational preparatory class. If not, he is routed into a series of try-out classes in order that he may have a full opportunity to test his aptitudes and to learn something about the various vocations. A similar program is in operation for the girls.

It has been our policy to get in touch with the homes of the pupils, in order that we may know them more intimately. It has also been our policy to study the needs of employers at first hand and the vocational opportunities offered in the plants and business houses of the city. We have established with these employers a reputation for being able to select pupils with the proper aptitude for the needs of any opening and with acceptable personal features of intelligence, dependability, and co-operation. Having established the contact with employers, it is possible for us to find jobs for our pupils not only of a temporary nature, but also as the natural outlet for those in our occupational preparatory classes. We are able to direct many of our pupils directly into the apprentice courses of the city, both in the metal trades and the building trades and trades in which the girls can fit.

I may say that we have not considered the matter of so-called 'trade extension work' because the question has not arisen to any great extent. This is doubtless in the future for us when we shall, after 1925, absorb the seventeen-year-old group. Thus far, we have considered as our primary function (to summarize) the vocational guidance, the fitting, and the placement of our pupils, as well as developing in them desirable traits of citizenship.

F. CLIFTON, NEW JERSEY, CONTINUATION SCHOOL

CHESTER F. OGDEN
Principal

An interesting example of how a comparatively small continuation school can be so organized as to give its pupils the advantage of working with other pupils of equal mentality is shown in the Clifton, New Jersey, continuation school.

Clifton, which is a city of about 28,000, is situated in the metropolitan section, having a number of manufacturing plants in which minors are employed. The board of education had a continuation school established as required by law. The school has had each year an enrollment of about 400 and is organized according to mental groups. The highest group attends on Monday for six hours—the other groups on Tuesday, Wednesday, Thursday, and Friday; each group attends six hours per day.

The school is organized on the pre-vocational basis. Three regular teachers are employed, two women and one man. The pupils are given instruction in academic subjects, with attention to health, hygiene, physical education, citizenship, and social efficiency. The aim in all subjects is to have correlation with the actual activities of life. Courses in domestic science and practical sewing are given the girls. The course in cooking is centered about the fundamental principles governing successful baking, selection, preparation, and tasteful serving of food, avoiding waste, and simple work in dietetics. The choosing of suitable utensils and linens, computing costs, elementary work in budget making, keeping household accounts, checking bills, etc. are given much attention.

Instruction in sewing includes such topics as relate to health, selection and care of clothing, mending, making and remodeling simple garments, patterns, choice of materials, etc. The use of the sewing machine and its attachments is emphasized. Girls are encouraged to bring their individual sewing problems from home. We have an excellent equipment for domestic science. The dining room is fully equipped—also a stock room for keeping supplies, refrigerator, etc.

The boys are given instruction in manual training, for which the equipment is mostly for a woodworking shop in which the elements of carpentry, cabinet making, and pattern making are taught. The arithmetic work of the class is given to correlate with the work of the shop. Freehand and mechanical drawing are taught. The boys in the shop are encouraged to bring in their individual problems—especially such articles as need repairing. The boys have set up wires for radio, and they get much benefit from its use. Discussion along radio lines is encouraged.

I might add that we have very little trouble in the matter of discipline. Our hardest problem is to locate and get pupils to report for registration. After we get them here, we follow up their attendance. If pupils are unable to report one week, they are requested to do so the next week. In 1920 our percent of attendance was 94. Last year it was 99.

The work of the continuation school is very interesting. It is not static. The actual purpose of such a school is to give these boys and girls who have left school a better chance. The content has been discussed. The method must be independent and not along the old pedagogic lines. It must be adapted to the various groups according to their various needs.

G. PITTSBURGH, PENNSYLVANIA, CONTINUATION SCHOOL

ANTHONY M. GOLDBERGER
Principal

The Pennsylvania law requires an eight-hour weekly attendance at continuation schools of juvenile workers between the ages of 14 and 16 years. In Pittsburgh this period is divided into two equal periods of four hours each. One of these four-hour periods is devoted to vocational or pre-vocational work, with such related subject matter as is necessary to supplement the manipulative skill required in the occupation. The choice of the type of work rests almost entirely upon the student's desire. The comparatively small percentage of pupils who are not in purely juvenile occupations usually choose the vocational work most closely related to their occupation. The remainder make choices in keeping with their interest or their plans for the future.

The remaining four hours of instruction are devoted to general subjects. These are a recognition of the fact that pupils, regardless of the differences in their future occupations, are citizens of the same land, with the duties, responsibilities, and privileges that devolve upon all other citizens. Instruction is given which has as its aims, among others, to bring about better habits of citizenship, proper uses of leisure time, respect for health, and a good attitude toward further education. Instruction is on the daily unit basis, and material is chosen from those problems which directly concern the pupil's present life.

H. DETROIT, MICHIGAN, CONTINUATION SCHOOL

E. LEWIS HAYES
Supervisor of Industrial Education

The actual purpose of the junior continuation school is to carry over the previous education of the young people to the practical problems of life which they meet every day. The junior continuation departs from traditional practices and attempts to put these young people into a place in the complex maze of industrial activities, to find the correct position and prepare the boy or girl to fill it—a task which he or she would be impossible of accomplishing without proper guidance. Now, to train a boy to fill a place in industry or commerce involves an almost indeterminate number of variable factors, of which the chief variable is the individual. To cope with the problem of the individual, it is necessary that there be the closest co-operation between the school and the industries in which the boys and girls are working.

To accomplish the purpose of linking the school and industry, co-ordinators go between the teacher and the employer. A co-ordinator studies the exact qualifications of the boy's job, and its future, then transmits the results of his investigation to the teachers who have the boy in classes. It is the obligation of the teacher to adapt the course of study to the needs of the student. The junior continuation school attempts, and is quite successful in the attempt, to give every student the training that he desires or the training which it is determined will be to his greatest advantage. The best education possible under the handicaps of a newly devised system of education demands that the courses offered be practical and efficient, and still permit of a wide range of variability. It is with this end in view, that no innovation is instituted in the junior continuation school until its practicality from educational and industrial standpoints is assured.

The time that the boy or girl spends in the school must be taken from the regular working hours between 8:00 a. m. and 5:00 p. m. Out of the 48 working hours, eight hours a week must be spent in school from the age of 14, when working permits are first granted,

up to the age of 17. This means that if the boy drops out of school at 14, he must spend 16.6 percent of his working hours in the school. Four hours are spent in the social sciences and four hours in the trade, or occupation group. Provision is made for 'try-out' courses in case the student is not satisfied with his present field of endeavor.

Following are the curricula:

1. *Vocational*

(a) Commercial

1. Boys
2. Girls

Store and office occupations

(b) Industrial (Boys)

1. Machine shop
2. Sheet metal
3. Electrical
4. Automobile mechanics
5. Printing
6. General building trades

(c) Home Occupations (Girls)

2. General continuation and reservoir classes (Boys and Girls)

The social science courses are designed to increase the general intelligence of the young workers, not only with a view toward better training for future citizenship as distinctly separated from the every day work, but also to give a broader understanding of all industry, in order to offset the prevalent ignorance superinduced by highly specialized processes. Everything revolves about the theory that a well-balanced training for a given trade involves a well-balanced training for the unlimited vicissitudes of citizenship. The courses offered under 'social science' are English, history, mathematics, and civics. Arithmetic and mathematics in this department are most closely related to the trade groups.

The trade groups, as outlined, are most closely representative of the more important trades of the city. It is impossible to give specific training for all of the 260 or more trades, so that a general training in the fundamentals of the groups is given. It is quite

possible in a general course to give individual attention to a boy, so that he may get specific training directly relating to his job. And it is also possible to give trade preparatory work for the boy who has not selected a permanent vocation.

The junior employment division of the junior continuation school affords an invaluable opportunity of finding these trade-preparatory boys and girls openings in their chosen fields.

From this résumé of the junior continuation school it may be seen that such education fills a void that cannot be bridged in another way. There will always be a great percentage who will drop out of school as soon as the law allows and while the junior continuation may exert a slight influence toward retaining in school, it will be seen that these cases are the exception. The application of the theory, imparted in the school, to the practice on the job is perhaps the most beneficial phase of the continuation school. As the work is carried on, there are, naturally, many new aspects presented, and with the rapidly developing spirit of co-operation between employer and school, these new problems are becoming more easily solved. It will not be long until the junior continuation school enjoys the same popularity as the academic high school has experienced.

I. ST. LOUIS, MISSOURI, CONTINUATION SCHOOL

L. W. RADER
Assistant Superintendent of Schools

The whole aim and purpose of part-time courses should be that of training in citizenship. In fact, education for complete citizenship must include the successful producing of a commodity needed by society. General intelligence, competent citizenship, and work efficiency form a unit never to be broken. Native ability will vary the methods in instruction.

Part-time courses should increase the general intelligence of the young worker, at least to the point where he will be able to protect his health, to read and to interpret current events, to read and to understand industrial history and geography, and to write a good business and friendly letter. They should also give a practical knowledge of business ethics. We should not lose sight of the fact that citizenship is a working principle.

Work, whether in classroom, in office or in shop, should foster citizenship, not only in sentiment, but also as a working principle. All work done by pupils of part-time schools should be organized in consonance with this conception. Spelling, writing, civics, etc. should be so taught as to be woven into the life processes of the students.

In the administration of our part-time schools, we ask teachers to devote about fifty percent of the time to helping these workers develop industrial intelligence and skill within their chosen trades. Where the opportunities for advancement do not exist, the boys and girls are prepared for some other definite kind of skilled and remunerative work. We have courses labeled vocational civics, practical English, industrial history and geography, hygiene, and business ethics, all of which, with the instruction in giving vocational guidance and intelligence, revolve around citizenship.

J. BROOKLYN, NEW YORK, CONTINUATION SCHOOL

BENJAMIN FOX
Principal

The Brooklyn Continuation School fills an important gap in the life of the working boy and girl. These boys and girls, ranging in age from 14 to 17 years, are plunged into industry without any special training, at a restless period of their lives, and are open to every changing influence. At no period in their lives are such pupils more in need of guidance and training. It is this need that the continuation school fulfills.

At the present time the continuation school embraces all boys and girls under 17 years of age who have not completed a high-school course. Attendance is required for four hours per week until the pupil reaches his or her 17th birthday.

Many of these pupils leave the elementary school because of their dislike for the traditional reading, writing, and arithmetic, as well as for economic reasons. Therefore, the continuation school tries to overcome this dislike on the part of the pupil, by giving him supplementary training in the trade he has chosen, thus making for better citizenship.

A good idea of the working of the continuation school may be gained if we follow a child's career through his stay at school. When a pupil registers at the school, he is placed in the preparatory class. In this class he is interviewed by a teacher trained in vocational guidance work. The teacher studies the pupil's former school record, his level of intelligence, the occupation of his father and brothers, and above all, the pupil's prospective occupation, and his ambition and inclination. As a result of these observations, she places the pupil in the appropriate class. Thus, a pupil of average intelligence who likes mechanical work and is interested in carpentry would be placed in the wood-working class. A boy who is working on a truck and who intends to be a chauffeur would be placed in the automobile mechanics class.

A girl who works in a dressmaking establishment and who wishes this work would be placed in a sewing and dressmaking class, while those who are going in for office work are placed in a typewriting or office-practice class where they learn office procedure. It is true

that, of the pupils enrolling in the school, a great many are undecided, unemployed, or else employed in 'blind alley' jobs. In these cases the preparatory-class teachers give the pupil an idea of the various trades and assist the pupil in a satisfactory choice. It is also true that a great many have chosen occupations and careers for which the school has no corresponding classes at the present time, such as bakers, barbers, show-operators, etc. Such pupils are placed in classes most closely allied to these occupations until the school is ready to open a class in that particular course.

Having been assigned to a definite class, the pupil's session is fixed so that it will cause the least inconvenience to his employer, and owing to the fact that the school is run on double session, very little difficulty is experienced in that direction. A flexible system of transfer from class to class enables the school to change the pupil's hours to suit the convenience of the employer or to change his class if the boy changes his plans for the future.

Of the four hours a week that the pupil attends, two are spent in a vocational class, such as work-shop, automobile mechanics, type-writing, or millinery, and two hours in the academic room where the drawing, English, arithmetic, science, and industrial history connected with the particular trade are taught. All the work is individual; the courses are planned to fit the individual needs of the pupils. Training for citizenship is emphasized. It is always in the minds of the teachers to try to make intelligent, self-supporting citizens out of these youngsters.

The teacher is constantly watching the changes going on in the minds and plans of the pupils. After sufficient observation, the teacher may decide that the pupil is not fitted for the trade he has chosen and advise him to make a change. The teacher also observes the pupil's outside work, for a 'follow-up' is an integral part of the school work. One hour each day is devoted to visiting the places of employment of pupils, thus affording first-hand knowledge of the pupil's industrial life. Often the teacher may advise a change in position, especially if he finds the pupil exposed to industrial hazards and risks. He studies the opportunities for advancement and conditions of the work. This 'follow-up' system also serves to 'iron out' any difficulties between the employer and

the school or the employer and pupil. The wonderful co-operation that the Brooklyn Continuation School now receives from employers is evidence that this work is most effective. A great majority of firms not only permit their employers to attend the school, but even pay them in full for this time.

The many special activities carried on by the school are too numerous to describe at length. A school bank that teaches these young workers the habits of thrift and school assemblies that are addressed by men and women who have been successful in industry serve to supplement the training for citizenship. A medical inspection service, in co-operation with the Department of Health, seeks to discover any physical defects and leads to proper remedial treatment and selection of congenial positions.

The Employment Bureau in connection with the school is a very valuable feature. The constant shifting from job to job is a characteristic of the adolescent youth. The Brooklyn Continuation School Employment Bureau does not merely obtain positions for our pupils who are out of employment, but tries to place them in occupations particularly suited to their ability, aptitudes, and training. In this respect the employment teacher co-operates with the pupils' teachers. During the school year, September 10, 1922, to June 30, 1923, 1198 boys and 667 girls were placed in positions, and we may mention here that unemployment is practically unknown among the boys and girls of the Brooklyn Continuation School.

Periodically, an occupational survey is made of the present employment of the pupils and their plans for the future. "What are you working at now?", "What do you want to be?" are questions continually asked of the pupils. Thus, the teacher knows his pupil's needs and programs individual work for each child. A modified Dalton plan is used, so that the pupil advances as rapidly as his abilities allow.

It is as a result of this occupational survey that activities and departments are determined in the school.

Thus, in programming work for each child, in securing congenial employment, in assisting him to arrive at a vocational decision, the Brooklyn Continuation School is guiding and advising the child at a time in life when he needs such supervision and training most.

K. PLAINFIELD, NEW JERSEY, CONTINUATION SCHOOL

ARTHUR F. HOPPER
Director of Industrial Education

Perhaps one of the most interesting things to report in connection with our continuation school is the fact that employers, parents, and pupils have all been quick to recognize the value and significance of this scheme for part-time education. It has been particularly gratifying to see how employers have co-operated whenever opportunity occurred.

Such topics as health, thrift, community civics, right attitudes toward the work, employers, and each other have been stressed, resulting in a marked improvement in the pupils.

Our practice cottage (real five-room house), which was formerly used for high-school pupils, was given over to the exclusive use of the continuation school. Here domestic science and art work have been accomplished under actual home conditions. Each day the pupils prepare their lunches and frequently prepare and serve meals to members of the faculty and visitors. Here has been taught household management and the installing of ideal and correct attitudes in connection with home-making. The girls have been quick to recognize the value of this practical training, and in a number of cases have expressed a desire to continue in school after reaching the age of sixteen.

The well-equipped high-school shops were made available for continuation classes, and thus the boys were offered such activities as cabinet work, electrical work, cement work, machine shop practice, pattern making, molding, forging, and mechanical drawing.

Other interesting features in connection with the academic work have been the bulletin board and our information table. The bulletin board has been useful in connection with our weekly drives on thrift, health and hygiene, fire prevention and safety first, etc., as well as for current events. The information table is covered with newspapers, current magazines, books on vocational guidance, numerous pamphlets describing various types of industry. This table

has proved very popular and has been of untold help in connection with the academic and shop teaching.

Weekly drives were very successful and brought forth excellent results. During 'Better English' week the pupils were taken to the public library and taught methods of looking up books, how to secure a card, how to use books of reference, and as a result every pupil became a member of the public library.

One of the best proofs that the teachers have won the confidence of their pupils is shown by the fact that these young people frequently visit them after they reach the age of sixteen. In a number of cases, the girls have called on the teachers and spent the evenings with them sewing, chatting, etc., and have taken them into their confidence concerning personal matters, which often gave the teacher an opportunity to be of valuable assistance. The continuation school has opened up many avenues for this type of social service work.

Much of the success of the work has been due to the very valuable assistance and many helpful suggestions given by the State Department. With this continued co-operation it will be possible to build up a new type of education that has so long been needed by these young people who leave school to go to work. This education will have a far-reaching influence in their lives, the significance of which cannot be overestimated. Moreover, we feel confident that employers will benefit by having better trained and more efficient workers.

CHAPTER VI

DAY AND EVENING INDUSTRIAL COURSES IN SMALLER CITIES

A. THE GENERAL SITUATION

In reviewing the reports from various school systems throughout the country one cannot but be impressed with the feeling that many of the evening and all-day vocational schoolmen are unwilling to make definite assertions concerning what is to be taught.

Many contend that certain things can be accomplished and are being accomplished, and that certain things can be taught best, only on the job. Many of the leaders believe that there should be one type of training recognized as related subject matter and another type which is strictly of trade content in the manipulative processes. There is a feeling that each should be kept separate and taught by different instructors. It is with respect to the manipulative side of vocational training that great differences of opinion exist as to where it should be taught.

Mr. Lewis Gustafson, Superintendent of the David Ranken, Jr. School of Mechanical Trades, St. Louis, Missouri, feels that much of the work in the school shops must of necessity be of an exercise nature. This is especially true in such courses as plumbing and electricity. These exercises need not be of a useless type, but may be presented as parts to be used later in some form of production or construction of a permanent nature.

Much of the work as done in the Ranken school is taught as production work, but on a jobbing, rather than on a quantity basis. By this means the particular teaching job is 'put over.' The learner attains certain skills and information, and the product is useful. Mr. Gustafson cites some specific cases from industry itself in such commercial establishments as The General Electric Company, at Lynn, Mass., The Augsberg-Nurnberg Werke, of Leipzig, and The Siemann-Schuckert Werke. In all of these corporations the apprentices are trained under the factory roof, but in separate rooms

or divisions, with special teachers in charge. The product of their training is of an exercise nature, in part, and often is the construction of miniature working scale models of the product of the plant. In the Augsberg-Nurnberg plant, for example, they were building scale models of steel bridges. In all cases the time element of production was eliminated. The students were grouped for class instruction, rather than for production. This seems in itself to substantiate the methods of the schools in keeping the learner out of the production department and placing the emphasis of his training on learning necessary skills and information before allowing him to compete as a producer. At times, parts are made for the finished product and then turned into the stock bins for assembly.

Both the Pratt Institute and the David Ranken Trade School work, to some extent, on commercial parts which they have made arrangements to obtain from some manufacturing plant. But there is a definite understanding with the manufacturer that these parts are to have second place in the school work and will be worked on only as a teaching job. Such work is very desirable, but when contracts for "5000 bolt holes" and similar jobs are undertaken to be delivered within a definite time the learner soon becomes exploited, and production, not learning, becomes the dominate aim.

B. THE DAY VOCATIONAL SCHOOL

O. B. BADGER
Director of Industrial Education, Wichita, Kansas

The day vocational school is expected to prepare students more than fourteen years of age for entrance into industry, not as mere journeymen tradesmen in the fullest sense of the term, but with an industrial intelligence plus a reasonable degree of skill. It is impossible for the schools, with the time which the type of boys and girls that enter vocational schools can give to such training, to develop a high degree of skill in them, except in the semi-skilled trades. Either skill or industrial intelligence must suffer during the training process. After the boy is in the trade and without aid, he can much better develop his skill than he can his intelligence.

The instructions in the trades taught should include the study of actual tool operations and the basic underlying principles. Without the theory, the school would not turn out those that could become the leaders in their respective trades, and that is one of the important functions of the day vocational school. For those that have the natural ability for leadership in industry, the school will have served them well, and the others will have lost nothing by having acquired the fundamental principles. The expense of such schools is too great to turn out mere workers only.

Since the purpose of this type of training is to make the future leaders in industry, it becomes the duty of the school, in addition, to make intelligent citizens. Therefore, the practical shop work should be closely related to the study of mathematics, science, and drawing which effect his trade or to any other regular school work a knowledge of which will make him a more resourceful worker. The school should also bring him in touch with the problems that will vitally concern him outside his working hours through the study of civics and the elements of economics. A knowledge of the English language should be his, so that he can interpret all of these things intelligently as they are brought to his attention on the printed page. Time will not permit giving him a classical course, but he can get a working knowledge.

The question is frequently asked: "To what extent should the school shop work duplicate the actual conditions in industry?" It

would be highly desirable to make this duplication, but it is almost an impossibility. The cost of keeping an up-to-date equipment is prohibitive in many of the trades taught. And it is not always possible to get work on which the jobs are sufficiently varied to give the student an all-round shop experience such as he will meet from time to time in the actual shop. It, therefore, becomes necessary to introduce some projects which do not have an immediate commercial value. The writer has never seen a school where production work was the only work on which the student received training and was turned out with all of the experiences on the major operations and tool processes with which he will come in contact, unless the trade taught is semi-skilled.

The work assigned the pupils should not be in the form of mere exercises, except where the finished exercises can be utilized in a finished project which could be used, even though it may not be. It is far better that a student in auto-mechanics rebuild a car from two old ones, even though it is not of great commercial value when completed, than to work on some part that will never go into any car. By merely working on an exercise, he does not connect that part with the whole and does not see relationships.

C. EVENING VOCATIONAL COURSES

O. B. BADGER
Director of Industrial Education, Wichita, Kansas

The organization of an evening school for those in industry presents a complex problem. The first question is the consideration of what trades or portions of a trade can be taught effectively with the equipment found in the local school system. Only a few schools in the smaller industrial communities have many fully equipped shops, wood shops being perhaps the exception. Therefore, the instruction given must be confined largely to related subjects where little equipment is needed. Then the question arises as to what trades have content which would be aided by a study of related subjects. We know that the bakers, the cleaners, and the electro-platers have need of industrial chemistry; that carpenters, cabinet makers, boiler makers, and sheet metal workers need to know how to read a blue print, and that some of all of these groups need a better knowledge of shop mathematics. But there are other trades which may be aided if they were analyzed as some have been by our Federal Government.

It is perhaps easier to hold the interest of the students better if a shop is equipped and it is thus possible to teach the practical shop work rather than the related information. Most men appreciate their immediate needs best and in the practical shop work they can get something that they know they will need to-morrow. It is not always so with related subject matter: some of it will be of no value for perhaps a month, or a year, or two years.

It is questionable whether both the theory and the practice can be taught effectively at the same time, even though the necessary equipment is at hand. The time is too limited, particularly in such a trade as that of the machinists. Only a few men are willing to spend three nights per week for a period of two school years, and in the smaller cities it would be impossible to get enough men to make up a class. In the larger cities, there are enough in any one trade from which to draw, who will have the determination to go through with it.

It is possible to teach units of a trade which can be accomplished in a few weeks time, such as the use of one or two machines or one of the related subjects. Most men will stay by the evening school for a period of ten or twelve weeks. The next year another unit can be taught, and so on. Then, too, some men want one part of a trade, and some another, and for this reason it is highly desirable to have the work offered by units.

Men who enroll in an evening course are usually concerned in getting something that will help them to the next best jobs as soon as possible. They do not want, in the related subjects, a general course in science or drawing—valuable as it might be, but the science and mathematics and drawing that they want and need, must have specific value. There will be no danger of getting too much theory if a practical man has been selected to do the teaching, but this must be guarded against if an academically trained person has charge of the class.

The most discouraging thing to a night-school teacher is the dropping out of the students. Perhaps the most general cause is the lack of determination. The next most common is that the man finds out that he doesn't have the necessary background, academically, to keep pace with the others in the class. This is particularly true in courses in mathematics. Then, again, classes are too frequently held where it is not convenient for some of the men and often they feel 'out of place.' Many men hesitate to go to a school building. Some of the most successful classes are maintained in the shop in which the men work during the day. Often they prefer having the class before going home in the evening or with only a short time out for lunch. Where this is done, the men have the rest of the evening for other things.

Another cause for men dropping out is that they permit outside engagements to interfere with school night and cause them to get behind the class and consequently to lose interest.

If a teacher has been selected in whom the men have little faith, soon the class will begin to lose members. It is better to have one in whom the men have confidence, even though he be not so good a teacher. An instructor must be sympathetic with the men with

whom he is working. He must know the men's problems as they come in contact with them on the job.

The evening trade extension class is not a one-sided, or even a two-sided matter. The man, the employer, and the public are concerned. A written agreement between these parties is not necessary, but there should be a verbal agreement. The employer will give greater support to the work if he is consulted. The purpose of this instruction is three-fold; to make a better producer of the man for his own sake, to increase the efficiency of the plant in which he works, and to increase the efficiency of industry in general.

D. VOCATIONAL EDUCATION IN EAST CHICAGO, INDIANA

O. H. DAY

Assistant Professor of Vocational Education, Indiana University

East Chicago, Indiana, a city of approximately 36,000 people, lies along Lake Michigan, twenty miles southeast of Chicago. It is primarily a manufacturing city; most of the industries are owned and operated by outside interests. Steel and its products are the principal industries, although the Sinclair Refining Company and Grasseli Chemical Company have very large plants there.

The people of East Chicago present an interesting study, as approximately eighty-five percent are of foreign birth or parentage and twenty-two nationalities are represented. This one statement immediately indicates some rather unusual educational problems. Most of the children of East Chicago have a different conception of education and its value than the children of the majority of American cities. A large number of the children and parents feel that when the fifth or sixth grade has been completed, the time has come for the child to sever his connection with the schools and enter industry. Naturally, with such a condition prevailing, the greater number of the young workers are in the low-skilled occupations, and the process of upgrading to the higher skilled jobs is very slow. There are a great many highly skilled tradesmen in the factories of the city, but most of them do not live there. This all has a direct bearing upon the possibilities of vocational education, for two reasons: first, the only available jobs for young workers are of rather low order; and second, it is therefore difficult to 'sell' them the idea of taking definite trade training while in school.

Another phase of this problem is the attitude of the parents. They have all had to work very hard for an existence, most of them at common labor or at jobs requiring very little skill; it is very difficult for them to see why their children should remain in school getting an education, when they might be assisting in the support of their family, which is usually quite large. Hence it seemed (from a study of these conditions) that the first thing to do with the parents, most of whom cannot speak nor read the

English language, was to get as many as possible into evening school, not for trade work, but for the study of our language. The manufacturers were easily convinced that this was the logical course to pursue, and backed the English language classes in the evening schools strongly. This resulted in a marked increase in enrollment in the evening school; but, most important, it raised decidedly the percentage of attendance. In fact, during the first term this scheme was pursued, the average attendance was a little over eighty percent of the enrollment.

At the same time that we were 'selling' the English language courses to the manufacturers, we interested them in the day unit trade school for boys to see if they would accept our product when it had left our schools. We did this because we believed it wrong to organize vocational courses of any kind unless the product thereof (namely, the boys or girls who completed all or any considerable part of the courses) could find employment in the local industries at the trade for which they were trained.

Five lines of trade work were offered to the students at the beginning of the second semester of 1922; namely, machine drafting, job shop printing, wood pattern making, machine shop practice, and automobile mechanics. The specific purpose of each of these courses was trade training. No boy was allowed to enter the work of any course unless he had definitely chosen his trade and could support his choice with some fairly good reasons; and once in the course, he was made constantly to feel that he was preparing for trade work. He were not laboring under the misconceived idea that we would turn out a finished tradesman; but we hoped to build a substantial ground work for his trade skill and trade knowledge.

The courses are of two years duration, but are developed into semester units, so that, if a boy leaves at the conclusion of any one semester, he will have learned something of definite value in his chosen trade. In so far as possible, we duplicated shop conditions as he would find them on going to work; and a strong effort was made to prevent the formation of wrong habits of work which had so frequently given our vocational courses a 'black eye' with the manufacturers. The instructors were urged to take every opportu-

nity possible to familiarize themselves with trade conditions as they existed in East Chicago, and as frequently as possible to bring practical problems to the schools from various industries.

Along with the trade training, we stressed the idea of training for intelligent citizenship. In other words, we began our courses in civics in our school shops and carried them to the classroom, rather than vice versa.

We made use of a project and factory method of instruction so far as possible.

In conclusion, I wish to say that we have never found any difficulty in obtaining the co-operation of business men and manufacturers, or in selling our wares to them, providing we went to them with a workable scheme instead of a 'half-baked' idea. In our evening schools the manufacturers supported us as they did because they saw what value it would be to them for their workers to be able to read and understand directions given in the English language. This same spirit was passed on to the teachers, who, in the writer's judgment, are mainly responsible for good or poor attendance in any evening school.

Our plans for the future include an enlargement of English language work in the evening schools, and from this a gradual introduction of vocational courses in both day and evening schools.

E. THE SAUNDERS TRADE SCHOOL, YONKERS, NEW YORK

JOSEPH J. EATON
Saunders Trade School

The Saunders Trades School has graduated 565 pupils during the past ten years. A survey of the activities of those graduates reveals the fact that approximately only one-third are engaged in the trades for which they prepared, one-third are engaged in trades related in some way to the trades studied in school, and one-third are engaged in work not related in any way to their trade training in school; this division varies very much from shop to shop, but taking the school as a whole, it is fairly accurate, although rather surprising.

A further analysis shows that the third which apparently profited very little by their work in school is composed chiefly of the 14- to 16-year-old boys who entered the school in the 7th grade. This third also includes those who have died or who have moved from the city without leaving an obtainable record.

In no case have pupils been prepared in the school to enter any trades as journeymen workers, but on the other hand, boys have been prepared to enter trades as advanced helpers. Only an incomplete survey has been made of those pupils who remained in school but part of the two-year course. However, we find a fairly large number who are working in the trades for which they received partial entrance preparation, and in all cases investigated, the percentage runs approximately the same as that for graduates. Needless to say, this last group of non-graduates is much larger in numbers than those who completed the full course.

One of the aims of the school is to emphasize the duties as well as the privileges of citizenship, and thus far we have no record of any graduate who has not conducted himself in a manner which can compare favorably with the graduates of any other public school. Our records in this respect for the non-graduates are not available, but it is my conviction that a great many boys have been materially assisted to secure a proper view of their social relations, notwithstanding the fact that when some of them entered this school,

they appeared to be facing in the wrong direction. In all such cases it is my belief that what may be called the "fatherly attitude" of the shop teachers has been a big factor.

Our endeavor is to place the boys in suitable situations for advancement in manipulative skill and so to guide them that they will acquire the theory underlying these operations. Thus far our teachers of shop work have been persons of more than average ability as workers, but like other teachers in similar positions, their ability to instruct in related subjects has been rather limited; for this reason, related work in mathematics, science, drawing, and English has been conducted by special teachers. Insofar as my experience is concerned, it is my belief that it would be wiser for the shop teacher to care for all related work, as well as for shop work itself. I believe the boy would make greater progress, because the situations arising would be real, and we would not encounter the difficulties which we now experience with perhaps a third of our boys who frankly state that they are not interested particularly in the so-called "book work." I realize that a great deal of some of the formal instruction now given in related subjects would be omitted, and that many shop teachers would find difficulty in instructing in related science and in English.

In a school shop much of the difficulty arises in attempting to duplicate actual conditions in the commercial shops. In the first place, we cannot easily obtain tools and machinery which inventive genius is constantly supplying the productive shop. In the second place, we find difficulty in disposing of our product. Where the product is absorbed within the school system, these latter conditions perhaps do not exist. Here, for example, in our machine shop we have manufactured iron and steel vises for the various manual training shops in the city. During this period pupils have developed new types of vises superior to the first, and it now appears that we will have as large a market as we had when we first started to manufacture the vises. We have built groups of lathes for different training centers, starting first with an ordinary belt-driven speed lathe and finally completing a set of motor-driven lathes. At the present time we have been experimenting with a 14 -inch, 6-ft.-bed, machine lathe, and will probably undertake the manufacture

of these lathes for our own use. In this way we obtain good type conditions, but are very far from actual shop practice.

On the other hand, we find that our graduates are usually placed in some specialized form of shop work, and that their training seems adequate to help them secure and keep such positions. As a general rule, the older graduates have not remained as workers of automatic machines, but have advanced as rapidly as we might have predicted and desired.

At some stages in the shop work it has appeared to us highly desirable to present the work in the form of exercises, but as a rule, we bring in various jobs, such as have been outlined for our machine shop. Occasionally some project, like that of building a special machine for one of the other shops, presents itself. If the entire instruction were in charge of a single teacher for each group of boys, I would strongly favor placing a good deal of the work on the project basis.

In the evening school we have always had large groups of people in every shop, and owing to the fact that we operate two separate sessions two nights each, we are able to divide these groups into those who are preparing to enter a trade and those who are endeavoring to increase their trade knowledge and skill in the trade at which they are working in the day time. In the case of the latter, the problem is very simple, because the man or boy realizes what he lacks in order to fit himself for a better paying position. Such instruction is given on the basis of short units. In the case of the first group, the matter of adjustment is more difficult.

While we are quite certain that a plumber's apprentice knows what he needs to be advanced to the status of a journeyman, we find it difficult to determine the needs of the young man who thinks that he would like to be a plumber or the needs of the man who is working at some trade or occupation which is not satisfactory to him, but who thinks that some other trade would be more remunerative and satisfactory. It seems to me that, in the case of the group just mentioned, we must determine their continuance in school on the basis of accomplishment until we perhaps have been able to set up some tests to be tried out before admission. Practically all of the vocational instruction in the evening classes is on the basis of ma-

nipulations. We have tried to arrange courses whereby theory will supplement the practical work, but these classes are poorly attended, and thus far we have not succeeded in accomplishing satisfactory results.

There is one exception, however, in the work of architectural drawing, where we have had successful classes in estimating and plan reading. We encourage pupils to bring to the instructor, for advice and counsel, problems which they meet in their daily work. As a matter of fact, we find the success of this plan depends entirely upon the instructor, and not upon the type of work. After all, personality is a great factor in trade instruction, as well as in any other situation in life.

I am very much in favor of the short-unit course for the man who is already engaged in industry and believe that it will work with those who are planning to enter, when it is more fully developed. The main objection that we find now is that these units have not been properly recognized and organized, so far as we are concerned. The fact that the classes are filled at the opening of school, and that the instruction is practically continuous with the same groups throughout the school year, has not permitted us to enlarge upon the short-unit idea to the extent that we would like to, and are planning to do. The matter of organizing classes on the short-unit basis, insofar as we have attempted it, with the workers who are upgrading themselves, has not been a difficult matter. How it would be if the entire school were organized on that basis, is something I cannot answer at this time.

Last year we enrolled about one thousand pupils in our evening school and maintained an average enrollment of about eight hundred. The two hundred persons who dropped out of the different shop courses did so early in the year. We have always found that during the early sessions from 5 to 10 percent apparently are merely curiosity seekers who have no earnest purpose in view. The next largest number is composed of those who have been compelled to remain out of school for two or three consecutive nights on account of sickness or for some other reason, and who state that they do not wish to come back because the class will be so far ahead of them. This is based on the ideas of the traditional school and is a difficult

factor to overcome. Irregularity in attendance is in most cases merely a duplication of irregularity in their lives outside the school or is at times the fault of the instructor.

I am very much in favor of definite apprenticeship agreements which provide for evening school instruction along definite lines. One of the trades in this school is governed by such an arrangement. The results in every way are satisfactory both for the school and the pupil.

The chief difficulty with the evening vocational schools, to my mind, lies in the fact that, like the day schools, the opportunities for trade instruction are not wide enough to cover all of the trades or the branches of them, and there is not enough flexibility in equipment and housing facilities to meet emergencies. There also seems to be no definite solution of the question as to the rights of a citizen and tax-payer to undertake to learn a new trade and to have a class formed of such people in a manner that will meet the approval of the state authorities.

Furthermore, it seems to me that the evening trade school ought to be established on as firm a basis as the day trade school with regard to the dates of opening and closing, the permanency of the staff of teachers, and recognition of work performed through the granting of a diploma at the end of a stated amount and degree of accomplishment. It also seems to me that there ought to be some concerted action undertaken regarding the advertising of the school's activities, in order that those who ought to know about the school can be properly reached, for I am firmly convinced that there are many people who, either through a lack of understanding of the English language or because of the isolated situation in which they live and work, are unable to realize the great opportunity for free instruction which lies within their reach.

F. VOCATIONAL WORK IN THE PUBLIC SCHOOLS OF
CEDAR RAPIDS, IOWA

HOMER C. COUCH
Principal, Grant Vocational High School

Students attending the day trade courses are required to be in school six clock hours per day. One-half of this time is spent on shop work, one-third in related science, mathematics and drawing, and one-sixth of the time in history, English, civics, or physical education. We do not pretend to turn out journeymen. Immaturity of the students from fourteen to seventeen years of age and the limitations of equipment make it impossible to teach the 'trade,' in the full sense of the term. Boys and girls, however, who go through these courses are better fitted for entrance into the occupation which they have studied.

Co-operation in classes and between teachers of the school, together with training in citizenship, tends to fit boys and girls for citizenship as well as workmanship. Practical work and theory go hand in hand, and instruction is not sacrificed for the sake of production. A close relationship exists between the shop work and the related subjects. Teachers of related subjects have periods off when they are given time to go into the shops and study conditions there. Problems in mathematics and science are made up to fit the needs. By such co-operation between related subject teachers, and shop teachers, the classroom instruction can be made of very much more practical value to the students.

The shop work is very similar in nature to the conditions which students later meet in industry, except that work is not done for the sake of production. Boys are not rushed through a project. Conducting the work on a purely commercial basis is not desirable in a school, because it does not give every boy a chance to get the all-round training that is needed. Of the three forms of work to be assigned to pupils, 'projects' are the most desirable, because they simplify instruction and provide an incentive for work, giving boys something in which to be interested. 'Jobs' give all-round training, but are liable to lead to duplication of work and loss of interest on

the part of students. 'Exercises' are the least desirable, because there is little incentive in making them, aside from doing the work, and often the finished product is of no value whatever to the student who makes it.

In the evening industrial work the specific and immediate needs of workers are met by employing teachers who are familiar with the occupations from which these workers come. The work is largely individual, consequently the classes are kept small. The limited time available for instruction in evening classes makes it impossible to teach a trade, but many students who are young and ambitious have received a great deal of benefit in evening school classes. The instruction should be, as far as possible, supplementary to the daily occupation. If a student meets problems in his occupation, the evening school should certainly help him to solve them. The instruction should also help the worker to go higher in his occupation.

Short unit classes are excellent if the majority of the class is in favor of this type of work. If the size of the class can be kept down to a point where the instructor can meet individual needs, the short unit courses are not necessary in a city of this size; in fact, I believe that the attendance in these classes would be considerably lessened if this system was adopted. In larger cities, where there is a sufficient number of trades to make several groups, it would certainly be advisable to offer the work in short unit courses.

My observation has been that the most important reason for dropping out of evening school work has been the fact that many find the additional work too heavy for them; the second reason is the lack of interest. Many students enroll in evening school classes who never enter the classes. Many others come only one or two nights and drop out when they find there is real work connected with them.

The employers, as well as the employees, should have a friendly feeling toward the evening school.

I do not think that definite plans can be worked out for promotion. The man who benefits by evening school work will show it by

his work on the job and must look to this improvement to win his promotion.

The immature evening school student should be advised by the school authorities as well as his employer as to what is best for him to take. The employer should feel free to advise school authorities as to what is best for his employees. Only good can come of such relationships. The employer who has the interests of his employees and his business at heart should feel that he is a part of the school.

G. CO-OPERATIVE INDUSTRIAL TRAINING AT YORK, PENNSYLVANIA

F. A. R. HOFFEDITZ
Director of Industrial Training

For a number of years, the high-school enrollment in York, Pennsylvania, has been composed of more boys than girls. This is due, in part, to the popularity of the Co-operative Industrial Course in our four-year high school.

During the 1910-11 school term, the Manufacturers' Association and the School Board got together on the part-time, co-operative plan for our high-school boys. The motives in offering this opportunity were: to keep more boys in school, to give the poor boy a chance to earn while going to school, to train boys in a remunerative trade, and to supply workmen in the trades having more than average schooling.

In September, 1911, the course was opened to boys who had completed the ninth year. In 1914 a class of 26 was graduated and up to the present time 270 have finished the course. We are constantly checking up on what our graduates are doing. We find that 60 percent of them are in the community, either working on the job they were trained for or on something that this training has led to. The first class were all machinists' apprentices, while the 1922 class had six distinct trades represented.

The school law does not permit a boy to work until he is fourteen years of age and has passed the sixth grade. Should a boy drop out of school after fourteen, he is required to attend continuation school one day each week until he becomes sixteen. This restriction does not affect our first-year boys, because they are in school full time undergoing preparation in the trade which they have elected to follow.

After their first year in school, these boys are eligible to be indentured to some local manufacturer to serve an apprenticeship in his chosen line. This apprenticeship is for a period of 5,400 hours, in addition to all school time. The boys in school and shop alternate in two-week periods, and all of them work full time during the summer. At this writing, the enrollment is 339, with 195 boys working in 42 different plants.

Since these boys will sometime be citizens in this, or some other community, their curriculum has been fashioned to increase their general knowledge in so far as time will permit. Just because a boy is being trained to work in an industry is no reason for neglecting to augment his store of general knowledge. The school could not well exist without including trade training in the day's work. The school shop is used to supplement and supply the theory back of the operations performed in the commercial plant, because this instruction cannot be entirely delegated to the employer. To meet these conditions, we devote one-third of the school time to trade work and two-thirds to those subjects along the line of general education which best supplement the industrial work. Where possible and feasible, the latter leans toward the industrial point of view.

The type of training put on by the school should be governed, as is ours, by the inclination of the pupils, and the opportunity afforded by the community for them to continue in their trade after leaving school. The trades we are training for are those that the school shops are equipped to supplement. The metal trades group includes machinists, auto-mechanics, and sheet metal workers. The wood working group includes pattern-makers, cabinet-makers, and body builders. The electrical group includes house wiring, motor winding, and plant maintenance work. At present, there are also four draftsmen and two glaziers.

To judge whether this program can be considered a success, one should get in touch with some of our employers, or judge by the degree of advancement some of the 60 percent above referred to have made. The Manufacturers' Association last year had an application for membership from a new firm, the partners in which were graduates of several years ago, and who are now employing six schoolboy apprentices. Last year the boys in school earned a total of \$26,065.22. The total earnings since being established amount to \$209,286.37. Quite a number of boys, through their earnings, have been enabled to attend higher institutions of learning. But one of the outstanding features is that when these boys graduate from the high school, they do not have to wonder what comes next.

H. CO-OPERATIVE INDUSTRIAL TRAINING AT JOHNSTOWN, PENNSYLVANIA

JAMES KILLINS
Director of Vocational Education

We have in this system a Co-operative-Industrial program for the junior and senior classes in the high school, to follow the tenth-year unit trade courses where the pupil is to spend two weeks in industry and two weeks in school.

About 1914 a co-operative course was established for the sophomore, junior, and senior years, without any plan to give guidance or trade instruction, except as found in old-line manual training. Co-operation was easily established, and the first three years were termed successful. The war prolonged the situation that inevitably arose. Labor was scarce, and without any closely organized trade training, the boys were given plenty to do. Labor laws dealing with age limits and the slump which followed the war made it necessary to revise any program which did not justify the claim that the school already had something to offer the employer. The old co-operative industrial program was concluded last year with the graduation of the few stragglers who had to be taken care of.

In the meantime the more comprehensive plan was inaugurated. Beginning with trade experiencing and 'try-out' courses in the first year of the junior high school, boys with vocational or technical intentions and capacities were permitted to pursue shop courses one double period each day. A vocational counsellor safeguarded the situation, and no undue emphasis was given to the industrial work. Our aims are best expressed in the terms we use: eighth year—"proving year," ninth year—"fixed choice."

Following the junior high, we have Smith-Hughes unit trade courses for the boys who are to enter trades. Beginning next year, we intend to put our first co-operative industrial group into industry on the two-week-about basis. We know that the time is ripe for us to get started on a real footing. Our employers understand our plans and are with us, and we believe that the boys will profit to the maximum.

Our evening school, twelve hundred strong, has for five years dropped off in a well-defined ratio. This year I am making a careful study and report on why evening-school pupils quit. Not that our percentage is lower than our neighbors and comparable cities, but that the problem needs study. At present, my teachers are reporting the pupil's reason and their reason. The answers are running: "Didn't find what they were looking for;" "Work too hard;" "Live too far away;" "Work too late;" "Too tired at night;" etc. On the other hand, my impression is that a vast majority of evening-school first-week enthusiasts are chasing the "will o' the wisp" of *might have been*. So many think that the jobs of the world came through chance and a little schooling. Moreover, schooling has never suggested much application. Their elementary-school experience is a misty memory. Now, when they try shorthand, for instance, or mechanical drawing, they face the fact that it demands application, hard work and—well, they go back into their walks in life more contented with what they are and perhaps that is real justification for the evening school as a social and economic stabilizer.

Perhaps we have given too little time to the long-term course in night school. Our vocational courses are all short unit from demand, because of attendance, facilities, and personal inclination. For instance, our mining classes are organized definitely to prepare for fireboss and mine-foreman examinations, and are divided into units, advertised as such, and upgraded to meet the varying groups. Most of our machine shop, electrical, blue-print reading, show-card writing, and mechanical drawing classes are always elementary units. We have found no large demand for advanced courses or finishing courses. Our every aim is to help the student meet the actual problems in his daily work.

Most evening offerings are obvious. Long before the opening, the telephone inquiries show what is to be popular. Moreover, trade organizations and other associations make formal requests for certain classes. For instance the Master Plumbers ask for a class in plumbing sanitation. Our experience has been that any course which has not a pre-expressed call is most likely to fail to materialize, no matter how thoroughly advertised.

We have not been as successful in giving trade practice as theory in electrical work, mining, or woodworking trades. Printing, machine shop, and drawing rooms are practice. We have no instance at present where we have both theory and practice going on in the same trade. I have not drawn any conclusion that is defendable.

So far as agreements and relationships are concerned, I presume that I have been in a peculiarly hopeful community. There has never been any time when the working relationships could have been improved by written agreements, and since there seems to be a feeling that all is well, we have avoided any such maneuvering. We co-operate in getting all raw materials for machine shop work without any red tape or interference. Johnstown would be no better off with any agreements, and perhaps get into severe arguments that at present are settled among the few individuals. In further explanation I might say that our two big industries have headquarter offices miles away, which introduces another element of danger where agreements are in force. If I were somewhere else, perhaps I would favor them.

I. THE DAY VOCATIONAL COURSES AT TOLEDO, OHIO

J. M. STERLING
Vocational Director, Woodward Technical High School

In Toledo we have but a limited number of day vocational classes, but are slowly adding new ones as the demand develops and room in our schools becomes available. The classes in operation at present are in session for six hours, one half of which is devoted to the trade subject and one half to the related academic subject. The course is two years in length, and in that time we hope to teach the boy as much of the trade as it is possible to 'put across' to the individual. We know that it is impossible to teach a 'trade,' in the fullest sense of the term, but feel that the boy can be given a big lift toward the goal he has set for himself. I believe we do more than merely prepare for entrance into the trade, but at the same time realize that the boy at the end of the course will not be a tradesman.

Methods and machines used are of the most modern type found in production shops to-day. We feel that the machines upon which the boys work in the vocational classes should be of the same type he will meet in the factory, and with this end in view, we have equipped our shops with modern machines of various makes, in order that the pupil will work on the same type of machines found in the industry. This type of equipment, with a man from the trade as instructor, gives us what we think is a very good basis for instructional purposes.

It has been our experience that the work assigned in the class must, out of necessity, be more or less of the nature of an 'exercise' in the beginning, to be followed as soon as practical by actual 'jobs.' By "actual job" I mean the making of some thing that is to be used, and is therefore to be turned out good enough to pass as a commercial article. In some classes, such as machine shop, some articles are made in their entirety by the boy, but this is not general practice. The general practice being to give the pupil an exercise in taper turning, for instance, and then follow it immediately with a

number of pieces in the process of construction which involve taper turning. In this way the instruction is given with an exercise, and the pupil is given enough work on a production basis to give him a fair degree of skill.

Class instruction is given whenever feasible, but as a rule, the instruction is individual. In order to assist the instructor in this individual instruction, we are gradually working out a series of lesson sheets. These instruction sheets are so written that they apply to one particular type of operation, and in this way, may be applied to any job involving this type of operation.

So far, I have mentioned only the work in the shops, but going along with this is the work in the related subjects of mathematics, English, civics, science, etc. In these related subjects the work is tied up with the trade that the boy is learning. These subjects have a two-fold aim—to make the boy a better tradesman and a good citizen. In most of the trades, we have been able to develop a fairly good course in these related subjects, but there is a tremendous amount of work required in the preparation of the necessary lesson sheets.

We are thoroughly convinced that the best results are obtained by means of the lesson sheet and personal instruction.

We do not lose sight of the fact that the boy must be educated for his leisure time as well as for the work he is to do. This is amply taken care of in the related subjects. Each lesson sheet or group of sheets has a definite objective in view. This may be either vocational or civic. In either case, the lessons try to drive home certain facts that we feel the pupil should know. We have not by any means, worked out what to us is an entirely satisfactory program of studies, but are learning, by each day's experience, where we may better the work that we have started.

J. VOCATIONAL EDUCATION AT BERKELEY, CALIFORNIA

W. W. PATTY
Director of Vocational Education

The department of vocational education was established in the Berkeley schools at the beginning of the school year of 1920 under the direction of the writer. In the senior high school we have established applied classes in electric work, automobile repair, printing, machine shop practice. We are also making a beginning in pattern making.

It is rather early to speak of results, but we may submit our objectives: first, to recruit boys from the junior high schools, elementary schools, or outside of schools, who have a real interest in training in the trades for which we give instruction; second, to provide instructors of proved ability in their respective crafts; third, to conduct the work on a commercial basis in so far as practicable. In general, we treat our pupils as apprentices rather than as students. Instruction in supplemental subjects, such as mathematics, English, etc., is provided by special teachers.

In the four junior high schools the industrial work includes instruction in cabinet making, electric shop practice, wicker work, furniture making, printing, welding, and mechanical drawing.

The Machine Shop

The machine shop work in the senior high school is in charge of an experienced machinist, who is operating the shop on a commercial plan. No exercise work is given. The work at present includes making repairs and parts for machines in this and other departments, such as gears, lathe centers, lathe dogs, tool posts, clamps, reamers, etc. Patterns are now being constructed for several small machines and tools that can be used in the various manual training shops of the city, and later manufactured for the trade. Tools that have already been constructed for this purpose include vises, power hack saws, small circular saw tables, drill presses, and grinding wheel stands of several sizes.

The instruction is necessarily individual, with the exception of brief lectures and demonstrations on such subjects as heat treatment of steel, use of the micrometer, calculations used in gear cutting, setting up of machines on the various type operations, care of tools and machines, accident prevention, etc. For each piece of work done, a simple job card is made out by the student, showing to whom the work is charged, cost of materials, and time. The pupil's grade is entered upon the card and filed by the instructor.

The Automobile Shop

The work in the automobile shop is entirely upon a commercial basis. While the department owns several old automobiles, the work in the shop is almost entirely upon machines which are brought in by citizens of the city for repairs. For all repairs made, the cost of materials and a slight additional amount for labor is charged. The principal objective of the course is to teach the boy the care, repair, and construction of the automobile, so that he will be able to 'shoot trouble' and repair a machine when it becomes disabled.

The students are instructed in the principle of gasoline motors, testing motors, up-to-date standards of construction, and the use of garage machinery, such as the lathe, drill press, and hand tools. They are also given a course in carburetors, ignition systems, and oiling systems.

The Print Shop

The work done in the print shop is especially practical. All exercises are provided from practical jobs. During the first three months of operation this year, more than \$1500 worth of work has been turned out by this department. This work includes the weekly publication of the high-school paper, the printing of tickets for athletic contests, plays, programs for plays, concerts, etc. The course includes the art of printing, press work, English as applied to printing, design, history of printing, proof reading, cost finding, paper stocks and weights and measures.

The Electric Shop

The instruction in electric shop practice includes practical work in all common lines of applied electricity, such as the making of splices, joints, armature winding, charging batteries, etc.

Under the provisions of the part-time education act which went into effect in California July 1, 1920, special classes are maintained for boys who are engaged in mechanical pursuits which supplement their experiences on the job. These courses are of two types. For apprentice boys, supplemental work in mathematics and mechanical drawing is provided. For boys who desire to enter upon some other trade, applied work is given with a view to helping them choose a life occupation wisely.

Considerable attention is given to the design drawing and cost computations of all jobs done in the industrial department of the Berkeley schools. It is felt that this phase of the work is of the utmost importance and is one reason for having such instruction given in the school.

K. ALL-DAY VOCATIONAL CLASSES AT MUSKEGON, MICHIGAN

J. D. BICKNELL
Director, Hackley Manual Training School

In September, 1919, all-day vocational classes were started in the automobile, machine, and print shops of the Hackley Manual Training School of Muskegon, Michigan. It was felt that some attempt should be made to train for some definite trade those boys who could not, or would not, complete the regular four-year high-school course. These three shops were chosen for the experiment because they seemed to offer the best opportunities for growth and advancement in the community. The courses as outlined were each two years in length and were planned to conform to the requirements of the Smith-Hughes law.

It has never been our expectation to teach a 'trade,' in the fullest sense of the term. We do feel, however, that we have been able to give to those boys who have successfully completed the prescribed courses, a training which has admitted them to industry on an advanced apprenticeship basis or as workers who are able to earn a good living wage and who have an intelligent understanding of the requirements of their particular trade. Through the co-operation and friendly attitude of the employers of labor, we have found a steady demand for our graduates. In fact, there have been times when the demand far exceeded the supply of available workers.

The aim from the first has been, not only to train for superior workmanship, but also to give instruction that would make better and more intelligent citizenship. It is hard to conceive how a young worker without a proper appreciation of the duties of citizenship can measure up to his full worth to his employer and to the community.

In planning the courses in each department the attempt has been made to teach the processes involved, and as far as possible, the theory underlying these processes. There also has been a close correlation between the work of the shop and the related studies. The teachers of these departments have worked together to secure this end, and the results, on the whole, have been encouraging.

School shop work can never duplicate actual commercial shop conditions, but the attempt is made to approximate actual working conditions as far as it is possible to do so.

In the automobile shop a great many cars are brought in each year, and the work is handled as nearly as possible as it would be in a commercial shop. All kinds of jobs are undertaken, from the cleaning of a spark plug to the complete tearing down and re-building of a car.

The machine shop boys have built considerable equipment for the new junior high and continuation schools, including lathes, drill presses, grinders, steel stools, etc. Some twelve or fifteen row-boat motors have also been built. The same degree of accuracy is required as would be required in a commercial shop, and the shop conditions are made to approximate as nearly as possible what the boys would encounter later in productive industry.

The print shop turns out practically all the blanks, forms, and outlines required by the board of education for carrying on the work of the school system. A school paper is printed monthly as well as the senior class annual in the spring. The results in this department have been especially gratifying, and it has been impossible at times to supply graduates enough to fill the needs of the printing establishments of the community.

In all the departments the work is given almost entirely in the form of jobs or projects, and the boy is held accountable for results much as he would be in a commercial shop. It is difficult enough under these conditions to make the school shop approximate the actual conditions to be met later, to say nothing of what would be the result if the attempt were made to assign the work in the form of exercises.

L. ALL-DAY VOCATIONAL CLASSES IN ELECTRICITY AT UTICA, NEW YORK

CLARENCE L. CROFOOT
Utica, New York

The two-year high-school vocational course in electricity at Utica, New York, is organized under the Smith-Hughes plan; that is, for boys who are at least 14 years old or past the eighth grade. In this particular case, all the boys are grammar-school graduates and ready for the high school, but feel that they cannot stay in school long enough to complete a regular high-school or technical course, yet they want to take up electricity as their life work. These boys attend the electrical class three hours a day, or fifteen hours a week; the rest of their time is spent in mathematics, drawing, etc. Their work covers a practical course in bell wiring, house wiring, wiring for light and power in factory and office buildings, principles and construction of D.C. generators and motors, and the fundamental principles of A.C. circuits and machines. They are also given 'trouble shooting' and general repair of electrical machines. Two hours a week are used for theory and lecture work. The general aim of this course is to give the boys clear ideas of the fundamental principles of electricity and magnetism which are applied in the construction and uses of electrical machinery and appliances, as well as the best methods of wiring buildings for the efficient distribution of light and power, in order to encourage boys to develop in knowledge and efficiency after they are out of school. It may be still more briefly stated that it is to get the boy in the habit of "doing his own thinking."

A large number of the boys who enter such a department do so with no particular reason for their choice. They say: "I thought I would like it," "A friend told me it was a good line," "It looked interesting," or "I wanted to learn about motors." Only a very few have any real definite reason for coming. We find it a good plan to spend the first hour or two in drawing the class of beginners out on a careful analysis of the whole trade, showing them what the various lines are and where these will lead. This also includes what

their probable line of promotion will be and what is required of the worker in the way of physical strength, education, environment, etc. After such an analysis, many will decide that they are in the wrong work, which they frequently are; on the other hand, those who stick will be more keenly interested and will be working with a definite view of what they want. An opportunity chart, which shows the various lines or branches of the trade and their probable line of promotion, has been of great value to all concerned in connection with this work.

The best results are obtained when we merely state the problem in as nearly as possible the way in which it would be stated to the workman who is out on the job. For example, a wireman who goes to install a bell is not presented with a complete sketch of the whole installation, but, quite to the contrary, he is often shown by the lady of the house just where she wants the button, bell, and battery and is informed that he must get it in with as little muss and disturbance as possible. He then has to study the house as to construction, and makes his own layout, or, in other words, "does his own thinking" right there on the job. Why not teach a boy to work that way in school? It is perhaps better to present him with a set of typical lay-outs after, rather than before, he has completed the problems, for he will then look upon them as data which he has helped to gather and will appreciate their true worth. We use a good text and show boys how to study logically, building their knowledge of electricity on a good foundation instead of the hit-or-miss fashion. Many boys want to get right at motors and generators and if one is not careful, they will spend much of their time in reading those articles which are far ahead of what they can understand.

M. A CO-OPERATIVE COURSE IN VOCATIONAL PRINTING
AT EVANSVILLE, INDIANA

G. E. RUDDELL
Instructor in Printing, Central High School

Since the Smith-Hughes law has been in operation, the source of material for printers' apprentices has been greatly enlarged. Boys between the ages of fourteen and sixteen years who are employed in printing offices naturally select the printing trade as their vocation in the part-time classes, and therefore automatically become candidates for apprenticeships upon arriving at the age of sixteen. These boys have most all been through the eighth grade or higher and are required to take four hours of study a week. Two hours of related work and two hours of shop practice are given.

The course in shop practice includes the layout of the case, laying case, picking up type, putting type in stick, setting type from printed copy, proof readers' marks and their use, reading proof, correcting type, distributing type, setting type from manuscript copy, locking up forms for job press, feeding the sheets, etc. This general knowledge of the fundamentals is considered a good foundation for the boy to enter the print shop for the beginning of an apprenticeship.

After a boy has been registered as an apprentice with the local union, he is required to take a course in the vocational department for two years of twenty-four weeks each—two hours a day, three days a week. This course comprises lessons in shop theory and practical lectures, printers' arithmetical problems, English and punctuation, and spelling.

As the first two years of the apprenticeship is probationary, much care is given to proper training. Both parties, the employers and journeymen printers, agree that this is the time to lay the foundation for the boy's future, and punctuality in attendance is regarded as essential. At the end of each month the boy is given a record card showing his grade in each subject. He is required to show this to his employer and get his signature. Another set of these cards is furnished the union and the grades are read at each monthly meeting.

If the student skips class and is marked absent, the chairman of the chapel where he is employed is notified and the boy must make a satisfactory statement to his employer concerning his attendance. If his grades become poor, showing a lack of interest in his class work, the local committee extends his apprenticeship time until he makes a satisfactory showing in his work or is dropped as incompetent. Full pay is allowed the boy by his employer during his two years of school work.

At the end of two years, if his school and shop work are satisfactory to all concerned, he is made an apprentice member of the union. At the end of this time he is required to begin the International Typographical Union course of instruction, which he must complete before the end of his fifth year.

The system followed in these lessons is essentially practical and progressive. Starting with a few simple instructions, easily grasped, the student is given a set of practical exercises which furnish an opportunity to apply the theory and rules to actual problems and thus fix them clearly and firmly in the mind. At the end of five years with this course of instruction, a boy should be well qualified to take upon himself the duties of a journeyman printer, and by diligence and energy be in line for promotion.

CHAPTER VII

TRAINING WORKERS IN INDUSTRY

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It is impossible within the limits of this chapter to give any adequate picture of the situation and the problems confronting those engaged in the task of training men with or without experience in an occupation.

All that can be done is to give consideration to certain outstanding points, which will be discussed under the following headings: (1) the probability of more training in industry; (2) national associations and vocational training; (3) corporation schools and vocational education as carried on by industrial and business establishments; (4) the work of organized labor; (5) limitations on publicly and privately controlled industrial training; (6) efficiency factors in vocational training; (7) instructor training for foremen; (8) success conditions for training on the job.

I. THE PROBABILITY OF MORE TRAINING IN INDUSTRY

While American industry seemed, as a result of the war, to have come to the realization of the value of some sort of organized training, especially on the basis of demonstrations of its value during the war, much less use has been made of those experiences than would have been naturally expected. Many plants that had developed definitely organized training work under the pressure of war conditions, have done away with this work, just as many organizations have done away with other specialized services, such as employment management of welfare work.

This was, of course, perfectly natural; the depression following the war, the reorganizations necessary to meet peace conditions, the situation with regard to employment, and many other factors

all tended to bring about a restriction of activities and a cutting off of all but the most essential services.

While these things are true, they do not justify the conclusion that the value of the experiences gained during the war period has been disregarded or entirely lost. The question can be fairly raised at this time as to how far organized training is likely to be further developed in our industries as times improve, and as to whether the 'pick-up method' is still to be the chief dependence.

Of course, it is generally understood that any form of organized industrial training is merely a substitution of a more efficient device for a less efficient device. So long as we have turnover, promotion, or job shifts, training must go on. Organized instruction merely enables this training to be carried on more quickly, and with less expenditure of time and effort on the part of all concerned. That is all that it can do.

Looked at from this angle, there seems to be considerable evidence that, as our industries are gradually getting onto their feet again, the lessons of the war will not be lost. On the contrary, we shall see the development of more and more organized plans for the utilization of training.

This would seem to be probable for several reasons. It seems to be generally admitted that the cost of skill will remain at a higher level than in former years. This means that the cost of securing this skill must be reduced to the minimum. It means that the skill, when secured, must be of the highest type called for on the job. The restriction of immigration and the virtual stoppage of the flow of skilled workers from abroad, especially in the skilled trades, must, it would seem, force greater provision for training in this country.

Evidences of the recognition of this situation seem to be appearing in the degree to which national associations and labor organizations are now giving attention to the promotion and development of plans for securing effective apprenticeship training. It appears also in the degree to which many large corporations are developing comprehensive plans for training. It appears in the rapid development of trade extension work under public control, and in the increasing interest in the working out of effective co-operative

schemes between trade and industrial schools and industrial concerns.

On the whole, allowing for the necessary drop due to the business situation, it would seem that the lessons of the past five years have not been lost. Organized training of some sort must find a greater and greater place in our industries, to meet the situation brought about through increasing labor cost, to meet lessened ability to draw on training given in foreign countries, and to meet the sad lack of provisions for securing necessary recruits for our skilled occupations.

All these conditions would seem to indicate that more, rather than less, organized training must come into the field of industrial production, as a definite device for effectively meeting certain economic conditions that must be recognized in the future.

II. NATIONAL ASSOCIATIONS AND VOCATIONAL TRAINING

As has already been pointed out, industry has of late tended to develop and operate its own training. One interesting development along this line is the extent to which national associations have undertaken to deal with problems of training.

A general survey of the situation as it now exists shows that, while a considerable number of national associations have undertaken some activity in connection with training, the methods adopted and the ends sought have been widely diversified. It is also true that the training activities of different associations are in varying stages of development. It can be said of many organizations that they have not progressed beyond the stage of propaganda or promotion of the general idea of training workers. While they are concerned with the situation in their respective industries, in their discussions and publications they have not gone beyond the stage of saying: "Something ought to be done about it." They have not reached the stage where they have given serious consideration to what should be done or how it can be done. Other national associations, after an attempt to deal with the problem, have given up the idea for the time. An increasing number of national associations, however, are actively dealing with the problem.

The approach to the problem has been different with different organizations. Some, like the National Metal Trades Association, the National Hotel Men's Association, and the National Typothetae, have established definite training service departments. In these cases the national association has undertaken through a central office to furnish expert service in the preparation of instruction material and in the organization of courses of training. This service is furnished only to members of the association.

Another type of activity is that in which the national association has established co-operative relations with a training agency, as in the case of the National Association of Cleaners and Dyers. A third form of activity has been confined to the making of studies through the establishment of research bureaus. In some cases, however, the training service and the establishment and maintenance of the research bureau have been undertaken by the same organization, notably in the case of the National Hotel Men's Association.

Other national associations have confined themselves to the preparation of texts embodying the technique and practice of the occupation. In a few cases national associations have, through pressure brought to bear on industrial training agencies, such as the public schools, secured the establishment of training under public and private auspices. In such cases the training, while outside of the control of the national association, has nevertheless been determined by the association. In some few cases such a co-operative arrangement is working successfully. In other cases, the unwillingness of public training agencies to co-operate effectively has either seriously interfered with the efficiency of the work or has resulted in practical failure.

Another interesting fact is the type of training to which national associations have given consideration. Some of them have devoted their energies entirely to the promotion of training of college grade. They have taken the point of view that highly trained technical service is most needed, and consequently the best service to their industry can be rendered through the establishment of training courses in universities or engineering colleges. Other associations have concerned themselves with the training of minor

executives, while still others have concerned themselves solely with the training of workers; this latter case is, for example, true in general of the present work of the National Typothetae.

Whatever may be the particular objective or the particular range of activity covered in the plans of different associations, the movement possesses significance to those engaged in the field of vocational training. It demonstrates, for example, the recognition of an unfilled need by the representatives of a large group of plants. For one reason or another, they believe training to be necessary in their respective lines. The steps taken by these associations should be regarded as a criticism, in a way, of the training thus far developed under public and semi-public control. The associations undertaking training service do so for either one or both of two reasons: they recognize the present level of knowledge and skill to be too low under present conditions; or they are concerned with the maintenance of their personnel through the training of recruits.

Those associations undertaking research work are concerned with the development of more efficient operations and processes. Whatever may be the actuating motive, the steps taken by an association show that its individual members need assistance and even stimulation. They also indicate a lack of faith in the training agencies now engaged in offering vocational training.

Unquestionably one factor which has led to the taking up of research and training by national associations has been the widespread belief that better training results in better morale. How far this has been a serious factor, it is difficult to say, but it has unquestionably carried considerable weight in many cases. Another factor has, undoubtedly, been a real or anticipated shortage of skilled labor. This is a condition that is always liable to exist to a greater or less degree in all industries, but it is held by many people that recent restrictions on immigration and the increased difficulty of securing skilled labor from abroad, have made the situation more acute, and have doubtless led to a greater interest in training by national associations of employers.

Whatever may be the actuating causes of increasing interest in research and training on the part of national associations, the fact

must be reckoned with as one of the phenomena in the field of industrial training. It is true that in many cases this interest is confined to a few leaders in some associations, while the great majority of members remain indifferent or negative. It is, nevertheless, an important fact that associations operating on a national basis are more and more taking up the question of training and research conducted under their own control, and in many cases with the expenses entirely borne by the membership.

This is of vital importance to the plant man. Through national affiliations he can secure advice and assistance in developing training. He will do well to keep in touch with any activity of this nature which may be carried on by a national association representing his special line. It is of importance to the industrial school, public or private, because it indicates a failure on the part of such schools to meet a required need in training. In other cases it opens up opportunities for co-operation with an industry never before available. It is of interest to the student in the field of vocational education because it represents a growing movement which embodies vocational training carried on in many cases without regard to the possibility of utilizing training agencies already in the field.

III. CORPORATION SCHOOLS

These schools are operated by large plants, each for the training of its own employees, usually for specific occupations or phases of its work. Classes are held on the premises of the company. Commercial concerns, such as department stores or insurance companies, for example, operate classes on commercial subjects entirely.

Industrial concerns maintain either industrial or technical classes for workers, or commercial classes for the office force, or both. Many of these schools were organized into a national association of corporation schools, which has lately been merged into the National Personnel Association.

An article in the May, 1923, number of the *Vocational Education Magazine*, by Mr. Howard L. Briggs, Director of Vocational Education, Cleveland, Ohio, contains the results of a study of these corporation schools which justifies reprinting here.

VOCATIONAL EDUCATION AS CARRIED ON BY INDUSTRIAL AND BUSINESS ESTABLISHMENTS

Education in the past has been so closely tied up with the academic schoolroom that even those interested in vocational education are prone to view it from the public school standpoint. It is of interest, then, to learn the extent to which industry has gone in developing an educational system of its own.

The data contained in this paper were accumulated from letters, pamphlets, circulars, and house organs from representative industries scattered over the United States, received in response to a letter of inquiry sent out by the Department of Vocational Education of the University of Michigan, in March, 1922, to all Class A members of the organization then known as the National Association of Corporation Schools.

The purpose of this paper is to indicate the extent, method, and nature of the educational activities of the above companies. It has seemed to be more pertinent in listing the activities to mention the character of the business in preference to listing the firm name.

Upon pages 336-337 will be found a list of the industries studied. I have grouped their education programs under five columns. The first heading, "Operating own school," includes activities from trade apprenticeship courses to correspondence work. The second heading, "Co-operation with outside schools," includes expenditures for the maintenance of, or courses in, outside institutions, such as commercial schools, Y. M. C. A.'s, etc. It also includes active co-operation in sending employees to public evening and part-time schools. The third column heading, "Education through house organs," includes company publications, by and for the employee, covering educational articles describing the plant, plant operations, related science, safety, health, morale, etc. The fourth heading, "Referring to bulletins as an educational medium," includes cases where the company has definitely stated a policy of educating employees through bulletins and through bulletin board service. This includes health, safety, hygiene, morale, etc. The fifth and last column, "Attempting no education of employee" is self-explanatory.

In a few of the cases listed the activities have been curtailed, owing to the business depression at the time the inquiry was made, but the following list includes only the cases where a definite declaration of the intention to continue the work has been expressed. Some companies listed as carrying no work under some of the columns, or as conducting no work at all, have in the past supported an educational program, but for various reasons have failed to continue it.

Nature of company.	Operating own school.	Co-operating with outside schools.	Educating through house organ.	Referring to bulletins as an educational medium.	Attempting no education of employees.
Railroad.....	x		x		
Railroad.....	x		x		
Railroad.....	x		x	x	
Railroad.....	x				
Oil Company.....	x		x		
Oil Company.....	x		x		
Oil Company.....	x		x		
Oil Company.....	x				
Automobile Mfg.....	x		x		
Automobile Mfg.....	x		x		
Automobile Mfg.....	x		x		
Automobile Mfg.....	x				
Telephone Co.....	x		x	x	
Telephone Co.....	x		x	x	
Telephone Co.....	x		x	x	
Telephone Co.....	x		x	x	
Telephone Co.....	x		x	x	x
Electric Service.....	x		x		
Electric Service.....	x		x	x	
Electric Service.....	x	x	x		
Electric Service.....	x	x	x	x	
Insurance Co.....	x		x		
Insurance Co.....	x	x	x		
Insurance Co.....	x	x	x	x	
Insurance Co.....	x	x	x	x	
Printers and Pub.....	x		x		
Printers and Pub.....	x		x		
Woolen Mills.....	x		x		x
Woolen Mills.....	x		x		
Silk Mills.....	x		x		
Bank.....	x		x		
Bank.....	x		x		
Bank.....	x		x		
Pump Company.....	x		x		x
Pump Company.....	x		x		
Pump Company.....	x		x		
Pickle Company.....	x	x	x		
Flour Company.....	x		x		
Packing Company.....	x		x		
Department Store.....	x		x		
Department Store.....	x		x		
Department Store.....	x		x		
Department Store.....	x		x		
Department Store.....	x		x		x
Soap Company.....	x				

Nature of company.	Operating own school.	Co-operating with outside schools.	Educating through house organ.	Referring to educational bulletins as an educational medium.	Attempting no education of employees.
Soap Company.....	x		x		
Soap Company.....		x	x		
Electric Mfg.....	x	x	x		
Electric Mfg.....	x		x		
Electric Mfg.....	x		x		
Steel Company.....	x	x	x	x	
Steel Company.....	x	x	x	x	
Steel Company.....	x	x	x	x	
Steel Company.....	x	x	x	x	
Steel Company.....	x	x	x	x	
Steel Company.....	x	x	x	x	x
Steel Company.....	x	x	x	x	x
Cash Register Co.....	x		x	x	
Vacuum Sweeper Co.....		x	x	x	x
Blower Company.....		x	x	x	
Seating Company.....		x	x	x	
Filing System Co.....	x		x	x	
Paper Novelty Co.....	x		x	x	
Camera Company.....	x		x	x	
Boat Company.....			x	x	
Hat Company.....	x		x	x	
Tire Company.....	x		x	x	
Machine Mfg. Co.....	x		x	x	
Lock Company.....	x		x	x	
Gas Company.....	x				
Electric Cable Co.....				x	
Brass Company.....			x		
Locomotive Mfg. Co.....			x		
Machine Mfg. Co.....			x		
Watch Company.....			x		
Rifle Company.....	x	x	x		
Furniture Company.....	x	x	x		
Corset Company.....	x	x	x		
Pressed Steel Co.....		x	x		
Air Brake Co.....	x	x	x	x	
Milling Mach. Co.....		x	x	x	
Drug Mfg. Co.....		x	x	x	
Record System Mfg. Co.....	x		x	x	
Silverware Company.....				x	
Elevator Company.....				x	x
Fertilizer Mfg. Co.....				x	x
Machine Company.....	x			x	x
Chemical Mfg. Co.....					x

SOME TYPICAL EXAMPLES
Companies Operating Own Schools
An Electric Service Company

Three schools are operated as follows:

1. The technical school offering courses in:

- Mechanics and heat.
- Elementary principles of electricity.
- Direct current machines.
- Elements of alternating current.
- Alternating current apparatus and machines.

(These courses operate five evenings per week for twenty-five weeks. Night workers attend special courses two afternoons per week. It was found that students were much more interested in the laboratory work than in the theoretical. For this reason, four evenings per week are devoted to laboratory experiments following definite lesson instruction sheets, and one evening per week is devoted to lectures. One complete report is required each week.)

2. The commercial school offering courses in:

(A) Compulsory courses during business hours for employees of the contract and inspection departments.

- Preparatory courses (English, Civics, Mathematics, etc.).
- First-year course (Business English, Company History, Efficiency).
- Second-year courses (Salesmanship, Company Policy, etc.).
- Course for stenographers.
- Course for telephone operators.
- Course on effective telephoning.
- Course for junior clerks.
- Course for record and information clerks.
- Course on personal hygiene.

(The above courses operate one and one-half hours per day, one day per week for seven months. A special eight weeks' course is maintained in the summer for those making under 75 percent.)

(B) Special courses are given for other departments including:

- Telephone operating.
- Stenography.
- For office boys.
- For show room maids.
- For porters.
- Office work instruction.
- Psychology.
- Public speaking.
- Telephone efficiency.

(C) Evening courses.

- Psychology (Voluntary for all employees).

3. The accountancy school.

- a. First-year course (Bookkeeping).
- b. Second-year course (Principles of accounting).
- c. Third-year course (Accounting problems).

(This company has its own special teachers and uses department heads for special lecturers upon technical subjects. It also employs the services of the staff of an outside school of accounting for lectures upon this subject.)

(A house organ is published covering morale, safety, educational reports, etc.)

A Rubber Company

1. A school for deaf mutes.

(This company found that deaf mutes were exceptionally skilful in building and finishing rubber tires. They were assigned to tasks where the accident hazard had been practically eliminated. They were particularly adapted to jobs requiring keen sight and observation. They now employ five hundred deaf mutes.)

2. An extensive library of technical books is maintained.

3. A school for a 'flying squadron' of picked men.

(This is a three-year course for selected men preparing for executive positions.)

4. The industrial institute.

- a. Special classes for foremen.
- b. Special classes for inspectors.
- c. Apprenticeship courses for the mechanical departments.
- d. Commercial courses for office and sales.

Business arithmetic.

Economics.

Organization and management.

Modern business methods.

Business law and corporation finance.

Public speaking.

Mechanical drawing.

Mechanics.

Shop mathematics.

Electricity.

Rubber manufacturing practice.

Portuguese.

5. Americanization.

- a. Reading, writing, and speech for foreigners.
- b. Assisting aliens to take out naturalization papers.
- c. Handling of affairs for foreign labor through expert interpreters.

(Classes are so arranged that any man, no matter what shift he is working on, may take advantage of the classes. Each and every man will find some classes which he is qualified to enter, irrespective of previous education.)

(The company maintains a house organ with articles furnishing instruction concerning the work of the various departments, reports of social activities of the employes, and general morale material.)

A Steel Company

(This company maintains a school of its own with separate building and staff. For a number of years they depended upon a local night school but found it inadequate in both scope and content.)

The following courses are offered:

Chemistry.
Metallurgy.
Physics.
Electrical repairing.
General accounting.
Cost accounting.
Arithmetic.
Shop mathematics.
Shop mathematics for apprentices.
Trigonometry.
Slide rule.
Tracing.
Drafting—general.
Drafting—trade apprentices.
Blue print reading.
Business law.
Industrial history and economics.

Customers' salesmen's course.
Filing.
Transcribing.
Shorthand.
Typewriting.
Telegraphy.
Business English.
Correspondence.
Foremanship.
Company organization and personnel.
English and citizenship for foreign-born men.
English for foreign-born women.
Business English by interplant mail.
Foremen's first aid lectures by medical staff.
Letter bulletins.

The total plant enrolment in the above courses is 1,613.

(The apprenticeship group receive pay during training very little lower than that received by journeymen. They work upon production jobs and attend classes two nights per week for which they receive regular hourly pay. Each apprentice is paid a bonus of one hundred dollars upon completion of the course and fifty dollars extra if he remains with the company for six months.)

(This company issues a typical house organ.)

A Department Store

(This store advertises the policy that it fills all worthwhile vacancies with its own employees through promotion and education within the store. All must pass a psychological test for general intelligence before being employed. Physical tests for health and sight are also given.)

The preparatory school.

a. Continuation school.

(This school is maintained for students from fifteen to twenty years of age. It is carried on during paid store time every Monday from nine to eleven, for three and one-half months totaling about 150 hours of instruction. The subjects covered are as follows:

Arithmetic.

Spelling.

Reading.

Local geography.

Hygiene.

Talks by store men on current political and business subjects.

(This school has an alumnae association, graduation exercises, pins, monthly social meeting, etc.)

The training school.

a. The selling division, junior class.

Salesmanship.

Store organization.

Store system.

Color.

Diction.

Advanced arithmetic.

Display.

Store directory.

Personal hygiene.

Demonstration sales.

b. The selling division, senior class.

Textiles group (Study of textiles, trips to mills, etc.).

Non-textiles group (Special instruction).

(This section has a technical library and special instructors do follow-up work upon the selling floor.)

c. Executive training course.

(For those showing unusual ability in other classes. They are in line for promotion to such positions as heads of stock, assistant managers of departments, department managers, merchandise managers.)

d. The office division.

Comptometry.

Dictaphone operation.

Correspondence work.

Bureau of investigation training.

Mail order shopping.

Receiving clerk's work.

Entry clerk's work.

General clerical work. (Filing, sorting, etc.)

(This company also maintains a house organ.)

The nature of the work covered through the industry co-operating with outside educational agencies will be indicated by the following extracts taken from letters received from various companies:

A Soap Company

"As for the different agencies mentioned in your letter, we do not have any organized means for the technical training of employees. Our vocational schools in are excellent, and such employees as are sufficiently able and ambitious, make use of the public night schools.

"As to Americanization, the school department furnishes us with a teacher for our Americanization classes, which are held twice a week after working hours with a large and gratifying attendance."

This company emphasizes the desirability of school attendance in its house organ, and announces the time and place of classes. They go on to state further:

"We have an industrial Young Women's Christian Association, with five paid secretaries, a Men's Club, a band, a Girls' Fife and Drum Corps, Benefit Association, Country Club for vacations, Girls' Dormitory for those whose homes are out of town, Auditorium, Bowling Alleys, Medical Department, Dental Department, Library with current magazines, and a branch of the Public Library.

"We have also an educational offer which provides the company's assistance for employees who wish to take night school work, and we have a rather unique offer providing that the company will provide any book for an employee who shows sufficient interest to read the book through twice and to write a synopsis of it."

An Air Brake Company

Quoting from their catalog:

"The interests of this city are so clearly those of the air brake company that the Y. M. C. A. must stand as an air brake institution. The company

provides the facilities for this part of the welfare work and the Y. M. C. A. provides the plan and supervises its execution. The large buildings housing the association were erected by the company. Today, nine teachers are required in the educational department to handle classes in scientific, commercial, and grammar school subjects. A special school for air brake apprentices is also included. The course followed provides eight hours per week class instruction for nine months. The regular shop hourly rate is paid while attending class, etc."

An Oil Company

"In addition to the safety, personnel, Americanization, and other general work carried on by the various departments, the company has maintained for some time a correspondence course for employees covering business in general."

The plant educating through its bulletins and bulletin board is typified by expressions like the following, "Posters containing brief and concise messages of an educational character are distributed through the factory and placed in prominent places weekly."

Some plants go so far as to have educational and morale messages sent out in the form of personal letters to the employees. Some enclose instructions in the pay envelope.

The house organ has proved a very popular method of promoting education within the industry. The following extracts from letters indicate the purpose underlying the publications.

A Card Record Manufacturer

"For the purpose of Americanization, morale, safety first, and general information for the welfare of the employees."

A Department Store

"We found at the beginning in order to make a demand for our paper it was necessary to make it very non-technical and by degrees raise its level. We try to use it more and more as a means of carrying valuable information to our employees."

A Suction Sweeper Company

"This publication is gotten out once a week and is intended to cover our community interests. We do not have an educational program but we put it across for the most part in an indirect way. You of course will see the purpose of some of the articles from the standpoint that the average employee does not see."

A Maker of Filing Systems

"In our opinion there is no better way of reach our employees than through the factory paper, and you will note that the papers offer a variety of subjects such as safety, health, thrift, citizenship, etc. Personal items are the ones that seem to appeal to the workers—we secure as many pictures and

cuts as possible as they immediately secure the interest of the writer in the reading matter that accompanies the pictures."

The number of cases where no attempt has been made to educate the worker are so few that it is not necessary to deal very extensively with them. Even there a tendency to develop educational work within the plant is frequently manifested as illustrated by the following:

"We have no well organized system of training for our employees. We are trying to create interest in this direction through our Job Committee, who, as individuals, have expressed themselves as thinking it a wonderful undertaking."

IN CONCLUSION

It is very evident that industry has found an urgent need for further education of its employees. The extent to which industry has gone in organizing schools within private plants indicates a failure upon the part of the public school system to function satisfactorily. Only one reply expressed confidence in the public school system as a medium for vocational education. This company made soap and did not require many skilled workers. There are many instances where Y. M. C. A. schools, private commercial schools, etc. have been utilized by the various companies satisfactorily.

The educational devices utilized by the various companies have been influenced in part by the type of education required and by the size of the company in question. Many have erected a school building and employed an educational director and a teaching staff. The various department heads are utilized as lecturers for work of a particularly technical nature and teachers are occasionally called in from private vocational schools to assist. In states operating under a compulsory part-time law, the company prefers to have the teacher operate within the plant. This arrangement offers a splendid opportunity for the schools to 'get acquainted with the needs of industry.' The part-time group is considered in most cases as a preliminary course, however, and the real vocational work usually is given by the company teachers.

Bulletins, house publications, and other printed matter seem to serve as a medium for safety, health, Americanization and morale instruction. Their use as a device for definite trade instruction is limited both by the interest of the readers and the possibility of the printed page without class teaching. They seem to form an excellent auxiliary educational medium, however, for companies conducting definite schools, and in cases where the work is of a nature requiring little technical instruction, they completely meet the situation.

A study of the nature of courses offered by various corporations discloses a surprising variety of course content. The question immediately arises as to the possibility of the public schools undertaking such a task. The action of the public service companies of a large city in combining all of their schools admitting students from all the contributing companies suggests the possibilities of further economies obtainable by turning the whole problem over to the public schools. There is no reason why courses cannot be devised to cover

the elements required in common by a number of employers. Further divisions could be made forming groups of advanced students covering the work of a still smaller group of employers, and finally, short units could be offered for each company group in the specific needs of that company under the direction of company lecturers and department heads.

The fault has been that industry has little faith in the academic school man and the attitude of many academic school superintendents in dealing with vocational education has verified their conclusions. The public schools of the future should at least meet industries' educational requirements up to the point of intensive specialization along individual company lines. We must secure the backing and co-operation of industry through 'delivering the goods' in the work that we are undertaking.

IV. THE WORK OF ORGANIZED LABOR

While organized labor has in general been greatly interested in industrial training, it has been mainly from a standpoint of apprenticeship; therefore the connection of organized labor with training schemes has been largely that of service to organizations making use of training schemes.

This applies to both publicly supported ventures and to training work carried on by concerns. The activities of organized labor in connection with training schemes carried on by shops or by public or endowed schools have been largely confined to such questions as: insistence upon standardized courses of training, adequate training, the limitations to be observed in the quota to be trained, and the conditions of admission to journeymanship.

It must be admitted that they have been more concerned thus far with the effect of vocational education upon their respective crafts, particularly from the standpoint of danger of overcrowding, than they have been concerned with the more intimate and detailed problems of effective instruction and training.

The last ten years have witnessed the gratifying development of a more favorable attitude on the part of organized labor toward the idea of industrial and trade training, particularly as carried on outside the shop through day or part-time classes and as carried on under public control.

The leaders in the labor movement have for a long time been favorably disposed toward the movement for industrial and trade

education, and they are to be given much credit for their support of it nationally and for the legislation along this line. The task has been to convert the rank and file to support the advance steps taken by their leaders, and this work is well on its way.

Here and there throughout the country doubtless can be found scattered classes established and controlled by organized labor—established for giving instruction, but the tendency has been for these classes to pass under public control, once their need and worth has been demonstrated.

In the very nature of things this has occurred, because organized labor lacks the funds to carry on any extensive scheme of its own.

In passing it should be noted that there has been a considerable movement of late in the direction of the establishment of classes in general education under the direct auspices of organized labor. The national organization for the education of workers, of which Mr. Arthur E. Holder is director, has apparently been steadily growing in strength. The situation might be summed up by saying that in the field of trade and industrial education, organized labor is favorable to such work when carried on under public control, and is apparently well satisfied to have that phase of training so handled.

V. LIMITATIONS OF PUBLICLY AND PRIVATELY CONTROLLED INDUSTRIAL TRAINING

Industry has shown a constantly increasing interest in the development of schemes for substituting organized training on the plan of the so-called 'pick-up method.' This increased interest has been shown notably in the case of many individual corporations.

As a result of national legislation, there now exists in practically all states an organization and funds available for promoting and developing practically any form of industrial training. These public training agencies have come into existence through legislation based upon the general idea that industrial training could, and should, be given at public expense.

During the six or seven years since this legislation has functioned, while much has been done in the way of rendering efficient

service to industry through publicly controlled agencies, on the whole, industry has tended largely to work out its own schemes independently of the public training organizations. This has perhaps been especially true in the case of large corporations and national associations.

In view of the facts that on the one hand free training service is available through state and local authorities, and on the other hand that industry is concerning itself more and more with problems of training, these questions become important matters: In what lines and to what extent can public training agencies now in existence render effective service to industry? To what extent and in what lines can industry secure the most efficient results by providing any desired training at its own cost and under its own control?

Until these questions can be answered to a considerably greater degree than they have been answered up to the present time, the situation remains inefficient and costly both to industry and to the public. If any industry can secure free of cost any form of training service that is effective from the standpoint of the needs of the industry and fails to take advantage of that service, it either does not get the service at all, or, by paying for it itself, introduces an unnecessary overhead. It is equally evident that if state and local authorities spend money, that has been appropriated for the purpose of providing efficient industrial training, for training that does not function, or for some form of educational work that is only a pretense of industrial training, the intent of the legislation is not met, and public funds have been expended for a purpose for which they were not provided. In either case, all the principles of efficiency and economy have been violated.

Of course, this statement is not new to the great majority of those who have been actively concerned with the development of industrial education. The situation is one that has been recognized as bad, both by those who represented industrial training through industry and those who represented public industrial training. Nevertheless, it is a picture of the general situation.

Various reasons have, of course, been given to account for this condition, such as, the inability of the public industrial educator

to see the problems of industry, and the existence of a generally antagonistic attitude on the part of the industrial man to publicly controlled industrial education. Probably a more common cause than either is the idea that any sort of training that is free is, of necessity, poor. In common with many other things, training is often valued in proportion to its cost, and this notion has undoubtedly, in some cases, tended to discredit public industrial training with some industrial people.

As a matter of fact, however, while such ideas may have flourished in the past, they are not now, in the opinion of the writer, the primary cause of the unsatisfactory situation. Those responsible for the promotion and development of industrial training under public control are, in most cases, at least, sincerely desirous of rendering effective assistance to industry and of developing training that will be really efficient.

It is equally true that to-day any plant executive who is interested in developing training for his personnel will give careful consideration to proposals coming from public industrial training sources, provided they are concrete and workable.

At present, the cause of the difficulty does not lie here so much as in the fact that, up to this time, there has been altogether too little study of the limitations on both publicly and industrially controlled industrial education. Neither the representatives of public industrial education nor the representatives of industry have had any definite idea as to what sort of training could be effectively given at public expense under public control, and as to what sort of training could most efficiently be given under the control and at the expense of industry. There has been a lot of blundering on both sides, often due to ignorance.

A tolerably wide experience with conferences which included representatives of industries interested in developing training schemes has led the writers to believe that in many cases these industrial representatives are totally unaware of the fact that desirable forms of training or expert advice can be secured through such public agencies as State Departments of Vocational Education and the Federal Board for Vocational Education.

As an example of this failure to utilize public training agencies that can function, many concerns carrying apprentice schemes calling for a certain amount of classroom work have entirely ignored the possibility of securing this part of the training through co-operative part-time schools. As a result, the 'school' part of the apprentice course has often been poorly laid out from the standpoint of effective teaching. In many cases, the instruction has been very poor because it was given by men who, whatever their other qualifications, did not know the first thing about how to teach.

As an example of the same sort of blundering on the other side, school men have, in many cases, insisted on putting up courses that in no way functioned so far as any value to the industry is concerned. They did not know what the actual training requirements of the industry were or the conditions under which the training must be carried on.

More important, however, is the fact that those in charge of publicly-controlled industrial training have, in many cases, put time, effort, and money into attempts to provide forms of training that could not possibly be handled through public agencies anywhere nearly as effectively as the industry could handle them itself. There has been too much 'going out for business,' regardless of whether the 'business' could be carried on profitably.

Instances of various mistakes of this character could be multiplied indefinitely, but the underlying cause in practically all cases where the parties concerned were sincere was lack of information as to what can be effectively accomplished through publicly-controlled agencies on the one hand and by the industry itself on the other hand.

This is the real problem that now demands careful attention. If some such agency as the National Personnel Association or the Federal Board for Vocational Education would make a study of this matter, it would make a most highly valuable contribution to the promotion of efficient industrial training. It is to be hoped that some agency of this kind will soon undertake this work.

Meantime, through such studies as have been made, and such experiments as have been conducted, some facts have been fairly well established that have a bearing on this problem. It has been

conclusively shown that expert operatives or mechanics can be effectively trained in how to 'put over' what they know, through 'instructor training' courses carried on under public control and at public expense. Any plant desirous of using instructors out of its own force or that wishes its foremen to act as instructors can get this particular training service free and can have this service better performed than the plant itself can do it.

Where a personnel man or other plant representative wishes to conduct training work with minor executives in his own plant, he can secure training for this work through public industrial training services. This has been fully demonstrated through the work of the Federal Board for Vocational Education and work of a similar character carried on by certain state departments, notably in New York, through which considerable numbers of plant representatives have been successfully equipped to do this work.

In the skilled trades there is no question but what full-time day schools can give training that effectively covers a definite part of apprentice training, and even the entire training of an apprentice. As a matter of fact, however, there are now in the country but a relatively small number of real trade schools that are doing this. The fact that it can be done has, however, been demonstrated. Still another field in which it has been shown that effective training can be given under public auspices is in work dealing with the improvement of foremanship and in preparation for foremanship.

The foregoing are some of the services that publicly-controlled industrial training has demonstrated that it can effectively carry on, and in these lines, so far as the possibility goes, industry should be able to secure such service free of cost. It must be frankly stated, however, that whether they can or can not be secured in any given state, or any given locality in a state, depends largely on the caliber and attitude of the state and local school officials.

On the other hand, it is extremely doubtful if there is any field for publicly-controlled industrial training in connection with specialized jobs. Such jobs might, of course, be taught in public classes, or, at least, in the plant by publicly paid instructors, but it is extremely doubtful if such work would pay, either from the standpoint of the plant or of the public welfare.

Again, it is, of course, obvious that any training dealing with the special technique of a given industry or with matters that deal entirely with plant or company matters, such as company policies or special processes, must be given by the industry at its own cost and under its own control.

Another matter that seriously affects the question is the size of the industrial unit. Take the case of a large corporation such as a railroad, for example, having a large number of plants in a number of communities or even in a number of different states, and having a central office control: it is extremely doubtful if the most efficient way to secure training is not, in most such cases, to handle the plan as a company proposition, drawing on the public training services for advice and suggestion rather than to depend to any great extent on local public training agencies.

On the whole, it is probably true that the small concern or the plant operating as a unit in some one locality is in a position to benefit most by opportunities for securing public training service. It is also true, however, that even the large corporation would do well to inform itself thoroughly as to possibilities whenever the establishment or extension of training work is contemplated.

All that can be done here is to draw attention to the importance of this problem. Until the choice between publicly and industrially controlled agencies for any given form of training is based on something more than guess work, so long as both the industry and the public representatives are largely in the dark as to "who can do what" to the best advantage, disappointing results are sure to follow. There will continue to be much 'lost motion,' lack of efficient co-operation, and failure to deal with given training problems in the most efficient way. The outcome will be corresponding excess cost, failure to use private or public funds to the best advantage, and dissatisfaction with the results. The problem is therefore commended to readers for thought and discussion.

VI. EFFICIENCY FACTORS IN VOCATIONAL TRAINING

Before taking up any detailed discussion with regard to training of the institution, it seems desirable to point out the general fundamental conditions under which vocational education effect-

ively functions wherever it may be undertaken. Unless these conditions are met, no form of vocational education can be effective, whenever or however conducted.

The primary object of any form of vocational training is to give the learner the necessary manipulative skill, to impart to him the necessary special technical knowledge, and to give him the ability to apply that knowledge intelligently in the practice of the special vocation with which that training deals. Manipulative skill is secured through adequate repetitive job experience under the direction and observation of an instructor. Technical information is imparted through instruction, either in the class or on the job.

Intelligence in the application of technical knowledge comes both through repetitive application experience on the job and to a certain extent through the use of suitable instructional devices outside of the shop.

Ability to profit by instruction. However well the practical or job experience may give training in manipulation, however well the technical knowledge may be selected, experience has demonstrated that satisfactory results cannot be secured with everybody. Hence the recognized principles that effective vocational training should only be given to those that can effectively profit by instruction. This fact should determine the selection of the group to be trained for a given occupation. In making this statement, I do not disregard the fact that, in common with all educative experiences, vocational training has valuable 'by-products' that function in general social adjustment and re-adjustment.

Use for training. While a proper training course, given to individuals who can profit by the instruction, should result in effective training, experience has further demonstrated that from the standpoint of its ultimate social value in the economic field, such instruction is efficient in proportion as it is given to those who will actually utilize that instruction, in that they will use the training for wage earning.

Minimal point for effective training. It is further recognized by all those concerned in vocational education that for any occupation the training must carry the learner up to a certain point of

ability before he is desirable from the standpoint of that occupation. This training need not be sufficient to equip him completely for the occupation, but it must be sufficient to carry him up to the point where an employer is willing to employ him at a reasonable wage. This, of course, means that training which does not carry the learner up to at least this minimal point loses much of its value. While progress in the training will vary with the individual, nevertheless in a general way the time required to meet approximately these requirements for any given occupation can be estimated by those familiar with that occupation, and no training should be regarded as efficient that does not at least bring the trainee up to that point.

To summarize, we have, therefore, as the conditions of effective vocational training, a training course which provides sufficient repetitive manual or 'job' experience, which imparts the functioning technical content, and which aims at developing the job or occupational intelligence whereby technical knowledge can be applied, given to a group, all of whom are able to profit by the instruction, and carried on for a sufficient length of time to equip the members of the group to meet the minimal employment requirements of the given occupation. In addition, the best conditions are met when this training is given to a group who will use the training as a wage earning asset.

Above statements general. This brief statement is, of course, perfectly general in its character and applies to all forms of vocational training, wherever and however given. It makes no difference whether the manipulative training is secured in a school, a shop, or on production jobs. It makes no difference whether the technical knowledge is picked up or is given in some organized way. It makes no difference whether the selection of the group is predetermined or whether it comes through accidents of employment and incidental recognition of need. The training as ultimately secured will be efficient in proportion as the stated conditions have been met.

Value of organization. It is also true, however, that, from the standpoint of expenditure of money, energy, and time, any vocational training course can be so organized as to give the maximal

amount of training in the minimal amount of time. Experience has shown that much of the technical knowledge can be imparted best through some form of organized class instruction, while some other parts can best be given at the time that their application is called for on the job, and that these proportions vary with different occupations. Experience has also shown that more satisfactory results are obtained if the manipulative training is secured through participation in actual production jobs, as distinguished from exercises.

Experience has shown, further, that this technical knowledge is so different in different occupations that there is little, if any, common basis for instruction, so that the trainees for different occupations must be handled in separate groups, not only in the shop, but also in class work. Many attempts have been made, for example, to conduct general classes in shop mathematics or shop science, where the membership of these classes was made up of trainees for different occupations. This work has proved unsatisfactory in two ways: first, the general character of the subject matter has not, and could not be applied directly to the actual problems of the occupation; second, much of the technical content of each occupation is so specific in its character that it cannot be treated in a mixed class. For both of these reasons, attempts of this character have not been successful.

General vocational subjects. It is quite true that there are a number of subjects that are general assets to a worker in a group of occupations. For example, a machinist never has occasion to make a mechanical drawing, and this would be equally true of a pattern maker or a house carpenter. It is undoubtedly true, however, that a certain command of this subject, which is the general language whereby the designer communicates with the constructor in all wood and metal working trades, is an asset to any worker in these trades. It would not be an asset to a printer, or a tiler, or a milliner. On the other hand, the knowledge and command of color, harmony, line, balance, and form which does enter into the trade assets of a printer, dressmaker, or tailor would not be of any occupational value to the machinist, the carpenter, or the pattern maker. In these so-called "general vocational subjects" there is unques-

tionably an opportunity to bring together mixed groups. The make-up of these groups is determined according to the occupations in which such general vocational subjects function.

VII. INSTRUCTOR TRAINING FOR FOREMEN

Among the results of the interest in foreman training has been the recognition—one might almost say the discovery—of the importance of his function as an instructor. It is now generally recognized that, in spite of the development of specialized agencies for providing industrial training, such as plant training departments, part-time schools, or trade extension classes, the great bulk of the industrial training given in industry is given, and must continue to be given, by foremen, and given on the job.

Hence, among the ten or twelve types to which all forms of foremen training can be referred, we find one type whose purpose is to equip foremen with such parts of the teaching trade as will enable them to instruct more effectively; that is, instructor training courses for foremen.

That the introduction of improved methods of instruction is of value to industry is unquestioned by all who are at all informed upon the matter.

Experience up to date has demonstrated that, when properly conducted and organized, instructor training courses for foremen can be expected to give many or all of the following results:

1. A more intelligent handling of new workers during the learning stage.
2. A shortening in the time required to train new help.
3. Much more efficient instruction, in the sense that it is more thoroughly grasped by the learner and is more intelligently applied on the job.
4. A more complete assimilation of instruction by the learner, so that he continues to carry on the work as he was taught.
5. Reduced friction, accident, or damage due to the giving of incomplete instruction or to instruction that was not fully grasped by the learner.
6. A better assignment to jobs with regard to the worker's past experience and individual ability.

7. As an indirect result of better instruction, there should be a reduced turnover, though it is only fair to state that this statement is based upon indications rather than upon absolute proof, so far as present experience goes.

While the general statement can be made that wherever foremen or other executives have instructing responsibilities, efficient instructor training courses will give such results, there are certain conditions where such courses are particularly serviceable, among which are the following:

1. In seasonal trades where a skeleton organization must train a large number of new workers at the beginning of each season, as in fruit canneries, many of the building trades, etc.

2. Where there are frequent changes in the prescribed way in which jobs are to be done (as where an efficiency department is constantly working out more efficient ways of doing jobs and these procedures must be 'put over' to the working force).

3. Where there is a high turnover among new workers.

4. Where there is excessive production spoilage, owing to improper methods used by the workers.

5. Where thoroughly competent labor is difficult to secure and the force is being expanded.

6. Where it is recognized that the instruction cost is high, owing to lack of the use of efficient methods.

7. Where the jobs are special jobs carried on only in that plant, and hence, workers already trained on those jobs are practically unavailable in any number. This might be true, for example, in a plant making buttons from vegetable ivory, turning out special forms of lubricants or abrasives, or in a canning factory.

As would be expected, with the recognition of the value of better instruction, a number of instructor training courses for foremen have been developed which, like all such courses, have varied in the time required for completion from less than one hundred hours to two years and in content, from assumed absolute essentials, to general psychology and the history of vocational education. The situation has developed to a point where it seems worth while to draw attention to at least one danger that may affect the further development of the work.

This danger lies in the fact that those developing many of these courses have often failed to recognize the difference between the characteristics of the instructing job of a foreman and the conditions affecting the work of a regular industrial instructor, employed for instruction only and usually giving instruction in a school. As a result, "instructor training courses" have been given to foremen which were developed to equip prospective instructors in regular vocational schools, and considerable material has been included in these courses which is of little or no value to a foreman under his working conditions.

In considering how much instructor-training a foreman can use (and hence the essential elements in a foreman's instructor training course) certain facts must be borne in mind. First, under almost all conditions his instruction is incidental and supplementary. Only in the case of green men is he required to put over a complete teaching unit. Second, it is 'sandwiched in' with his other supervisory and managerial duties; he gives it where he can and as he can. Third, he rarely has to instruct in a regularly organized, progressive course consisting of a series of jobs arranged progressively with the accompanying technical knowledge. He gives an 'old' man a few pointers, and perhaps instructs some 'new' man on the special way in which some production job is carried on in the plant. Fourth, his instruction deals almost entirely with individual jobs and the immediately related technical knowledge. Fifth, his instruction is individual. Sixth, his schoolroom is the shop floor.

Under these conditions a foreman can make little, if any, use of training in setting up a progressive training course by jobs, nor is he likely to have use for lesson planning, two subjects to which much time is commonly devoted in instructor training courses. Neither is he concerned with class or group organization and problems relating thereto.

Under these conditions, he cannot be expected to be an expert teacher, nor is he likely to be able to use the finer points of teaching. His instructing work must be more or less a side line for him, and if it becomes more than that, economy and efficiency indicate

the desirability of setting up some definite training organization to take over this work.

In the opinion of the writer, an "instructor training course" intended to equip foremen to teach *as foremen* would be fairly adequate if it were confined on the basis of minimal essentials, to securing the following:

1. A general command of the instructing process, including the function of the four steps; the difference between informational and development lines of approach; an understanding of the two or three applicable methods (use of questions, demonstration, illustration) sufficient to cover these points in instructing on any given job.
2. A recognition of the differences between learning and production difficulties as they affect instruction on a given job.
3. An understanding of the differences between the mental attitudes of the different sorts of learners with which he deals (old hands, new men, green men, etc.) and the fully competent worker.
4. The ability to make a content analysis for a given job.

Such a course would evidently require much less time than even a 'short' instructor training course and would cover practically all the points on teaching which a foreman could actually use on the job. Such a shortening of the work is desirable, with the limited time usually available for foreman training, since no unnecessary time should be spent on any phase of foremanship work, provided the actual needs of the situation are met, and everything included in the work should be of direct and immediate value.

In all teacher training courses designed to prepare men having industrial experience for teaching, the tendency has been to include much material which, while it has value, is not essential. This has resulted in extending the period of training over too long a time. In addition, some of this material has been too abstract or too academic to be of service to the type of individual taking the work. The result has been confusion, discouragement, and a feeling that the training was of little value on the job. This is bad enough with prospective 'regular' instructors, but is fatal with foremen, since, in most cases, they must be 'sold' on the whole question of the value to them of any training in teaching technique. It is therefore

highly essential that instructor training courses for foremen should give only what will actually keep them on the teaching job under the conditions under which that job is carried on.

VIII. SUCCESS CONDITIONS FOR TRAINING ON THE JOB

In order to give successful industrial training you do not need a separate building, separate equipment, and a separate corps of teachers. It can be done that way successfully and is being done that way successfully in many places. It can be done, however, in the shop itself through employers or through unions, and through either one of those agencies co-operating with the other or with schools, provided all such conditions as the following are met:

1. You must know what you are trying to do and be able to set up your course of study in terms of a direct aim. That aim may be preparation for a certain grade of wage earning, a certain occupation or occupations, or a certain grade or level of apprenticeship as a beginning.
2. Your shop in which the training is done must do work under real conditions, with real machinery and real processes. This is equally true whether the shop be under the school roof or operated for profit as a commercial enterprise.
3. Those who teach, whether they be foremen or teachers in an industrial or trade school, must be persons who have had successful experience in the processes they try to teach others.
4. You must have incentive on the part of the student body to take the work, whether they are workers in a shop or factory, on a farm, in an office, or students in a vocational school.
5. Finally, you need to set up relations with the outside world so as to insure a market for your product of trained people after you give them the instruction you have planned.

There are five problems that must be met in order to operate successfully a training scheme within a correctional institution anywhere. The first has to do with the choice of a training plan; the second with the reality of the experiences or teaching given, the third with the production system of the scheme; the fourth with the personnel of its instructors; and the fifth with incentives for taking the training earnestly.

As a matter of fact, millions of wage workers of this country have not only learned to do their work on the job, and in no other way, but they have done this without the advantage of any organized, systematic instruction to shorten the process of learning and advance their proficiency. This requires only that competent officers teach the men of their shops skill and knowledge in the processes at which they work.

The Personnel Problem

Everywhere the drift is toward the more effective training of men in occupations. Many of these occupations are not taught in schools and can not be taught in schools. Furthermore, there are very few schools to teach even the limited number of occupations that have been found feasible under the roof of the separate school.

Consequently, employers are trying to establish effective methods of training men on the job. This means either that the regular foreman in charge of the work must become the instructor; or that he must organize the scheme so that the most capable employees give under his direction this instruction or aid him in giving it to the novice; or that a separate instructor or instructors be employed on the staff to go about from shop to shop to do the work. Personally, I believe that the hope of small shops at least lies in making the foreman both a successful instructor and a successful user of the help of the more capable men for the instruction. But the major responsibility rests on him.

The first step, therefore, to my mind, is the winning of the foremen in charge of shops to a more effective program of training the workers in the shops under them. Doubtless at the outset of such a program such things as the following will be found. Some foremen will be opposed to the whole matter. They need to be won patiently and diplomatically. If they can not be won, they should be displaced by those who are interested in the opportunity and in the problem. The rights of men to training in the shop for better service should rise above the prejudice, the convenience, or the right to a job on the part of any employe of the institution.

Some foremen will be found incapable of rising to meet the new duty and responsibility. They are entitled to a fair chance to

demonstrate what they can do. When they fail, they should give way to those capable of discharging the task in the right way, and for the same reason set forth above.

Many, if not most, of those employed as foremen in shops are interested or will be interested and are capable. This is the nucleus with whom the work should be attempted. They are a precious asset to the concern using them in this way.

If this training responsibility is to be put upon foremen, it is only fair to them that they should be trained in some way to discharge this new responsibility, and the training must be done by some one who has had long experience in such foreman and instructor training with the foremen of manufacturing establishments.

There are two ways in which this task can be accomplished by a shop. Both are wise. Which one shall be employed depends upon conditions.

One way is to pick out one shop where there is a capable man interested in the problem, and get him to set up a training scheme in his shop. In this way his department will learn by experience and establish a type of what can be done that may be spread from shop to shop.

The other way is to take all the instructor foremen at the start; hold classes with them; help them to analyze their problem; select the training points; arrange the activities and experiences to be given in a progressive order; utilize training facilities effectively; and employ effective methods of training.

In either case there is need for some person in the force who knows, or can be brought to know, how to do the trick, and who will be the leader of the group in handling it. I am of the opinion that the training of foremen instructors should be done by the conference method, whichever one of the two schemes is employed.

CHAPTER VIII

DEVELOPMENT OF MEASUREMENTS IN VOCATIONAL INDUSTRIAL EDUCATION¹

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The industrial revolution of the past one hundred years has made marked changes in the industrial and social order. It would be entirely impossible and unnecessary to trace all the steps in the transformations which have occurred. The writer will call attention to a few rather special aspects which have to do chiefly with the adjustment of labor to new types of work and to the psychological significance of the general status of labor. It is probably true that, aside from the problem of selecting a trade or occupation suited to his abilities, the workman has certain attitudes and points of view which are worthy of careful study as to their genesis and their influence.

The successful use of steam in water and in rail transportation was hailed as a splendid culmination of effort in the perfection of trade communication. The crude steamboats and wheezy locomotives which were symbols of perfection have been left more than decades behind in the greater speed and reliability of the modern ocean liner and the superheated and automatically stoked locomotive. The transformation has followed the same trend in every line of improvement and invention. It carries with it some striking psychological effects. To the inventor it brings an incentive to reach greater heights as quickly as possible. He sees the imperfections of his first crude efforts and sets about making corrections at once. To the layman it brings re-adjustment to his methods of living and of working. He has learned something new; he has to think along

¹ See also Chapter VIII in Section I on objective measurements in educational and vocational guidance.

unfamiliar lines, and his conservatism tends to make him a foe to progress. He laboriously climbs the ladder of industrial revolution, hoping that each rung will be the last, for each one is a painful step. It is true that very often a step will be easy and surprisingly pleasant in the advantages which it brings to him, but innovations and re-adjustments are the rule rather than the exception in progress. These tendencies cannot be ignored in dealing with the problems of industrial education, since they motivate the unrest among the laboring classes to-day.

If one studies the history of industrial development, one may possibly feel a desire to criticize the historian who in his enthusiasm paints such a glowing picture of new discoveries that the millenium seems to have arrived. Then another invention comes along and brings another millenium; then another invention, and so on. By the time the present has been reached and the historian is finished, his stock of super-superlatives has been exhausted, and the tacit assumption is made that the end of possible improvement has also been reached. But improvements continue to be turned out at a startling rate, and the average worker has extreme difficulty in adjusting himself to a dynamic rather than a static and self-satisfied point of view. The end has not been reached and probably will not be reached soon in the evolution of industry. Society has lagged behind and adjusts itself slowly by the process of trial and error. The writer is concerned chiefly with the adjustments of workers to the situations which obtain in industry. His thesis is built around the idea that such adjustment is a matter of careful analysis of individual requirements and a scientific inventory of industrial abilities, so that industry may function more effectively and workers may labor more happily at occupations suited to their tastes and abilities.

TENDENCIES IN INDUSTRIAL PLACEMENT

The individual has paid a dear price for the changes which have come in industrial progress. The modern methods of shoe manufacture, for example, were hailed by efficiency experts as a last word in improvement. But the workman who had been working contentedly on small scale production under the friendly eye of

the small shop owner, underwent also a revolution in his personal life. He is no longer apprenticed to his master; he does not board and lodge in his master's home; he is removed from the community which he had known from boyhood. He is not only removed from his community, but also from personal contact with his employer. The mere difficulties of finding suitable lodging and some social contacts have an unfavorable effect upon him. At best, he is decidedly unsettled.

The employer also has had difficulties which are apt to be overlooked in society's greater sympathy for the laborer. He conducts business on a large scale, and to his own dissatisfaction, also, he delegates the supervision of his employees to others. Some rather unsuccessful attempts have also been made by well-intentioned employers to delegate personal interest. Such an employer knows little about the efficiency of individual workers, and believes a great labor turn-over inevitable. It must also be said that he frequently has an unscientific point of view; he does not believe in, and is unfamiliar with, modern methods of personnel selection. The chances are that he may have already paid a handsome sum to a so-called "efficiency expert on personnel." After such experiences, he cares for no more expensive innovations at the employment office. In such instances re-education to a more favorable point of view is a doubly-difficult task. While it is known that here and there the problem of personnel is being handled intelligently, it must be admitted that the traditional point of view holds in the main.

Happily for industrial education, the industrial problems facing army officials in the late war presented an acute situation in personnel. Men were needed not only as soldiers in the trenches, but engineers were needed as well to plan bridges and roads; carpenters were needed to provide housing facilities; electricians were needed to provide communication which would not fail at critical moments. Not only was there a great shortage of labor of all kinds, but there was little or no time to train workers on account of the urgency of the tasks at hand. It was found very unsafe to take a chance with the mere word of an individual that he was skilled in any given occupation. In some cases the individuals really believed they were qualified for jobs they applied for. Others took

a chance, trusting that their inexperience would be overlooked or undiscovered. Two alternatives were presented: first, follow the haphazard methods of employment used in industry; second, attempt a scientific plan of personnel selection. By choosing the second alternative, experimentation in the various fields of industry with respect to personnel was suddenly thrown open to scientific study under the guidance of army officials whose activities were not bound to tradition, and who were vitally interested in quick and effective results.

It was generally recognized that the personal opinion of employment managers, colored chiefly by personal likes and dislikes, was not a safe criterion to judge the efficiency of a worker in a given trade. It was also known that personal self-estimates of ability by prospective workers were unreliable and undependable in many instances. The problem then centered chiefly around how to eliminate the employment manager's opinion by means of standardized examinations, and how to verify the worker's self-estimate by comparable norms on the tests which were to be used. The processes of selection of test material and arrangement of items and testing technique were phases of standardization. Test items were suggested for workers by shop foremen and by experts who knew their fields. The arrangement of order of items was made after checking the percents of success on the correct answers to the questions, ranging in most instances from very easy questions which all men could pass to those so difficult that only the highly specialized could answer them. The testing technique included standardized instructions for giving the examinations in exactly the same manner to all candidates. The same time-limits and explanations were used for all examinations on any particular test, and the same methods of scoring were employed.

After the scores, or results, had been compiled for a larger number of individuals, the actual ratings, or scores, earned by men of known experience and proficiency in the industrial field were found by administering the tests to them. These ratings were then divided so that the four stages of proficiency—the novice, the apprentice, the journeyman, and the expert—were clearly indicated.²

²For a complete description of the scientific method in army personnel, see J. Crosby Chapman, *Trade Tests*. New York, 1921.

Chapman enumerates four different types of tests which were developed as follows: (1) the oral trade test; in which the applicant answered orally a set of standardized questions about the occupation or trade in question; (2) the picture trade test, in which the applicant had to explain the function of various parts of machines illustrated to him by pictures or prints; (3) the performance trade test, in which the applicant had actually to perform a standard operation on a machine; and (4) the written group test, in which the applicant had to read and answer in writing standardized questions about the trade. All these tests yielded objective scores and could in most cases be administered by a clerk or examiner otherwise unskilled in the particular trade or occupation. The objectional features of the former methods of personnel selection were eliminated to a large extent by this standardized procedure.

The *trade test* is an important device for determining the efficiency of applicants for positions. *It is a tool for measuring efficiency already attained in the field*, and performs a very important function in that respect. There is nothing in the trade tests, however, to indicate the desirability of *choosing as a vocation* any particular trade. The employer can use the trade test somewhat selfishly to select workers already proficient in his line. The vocational counsellor is faced with the larger problems of deciding suitable suggestions for all pupils and not for a selected and favored few. This situation is no disparagement of the trade test.

A different type of analysis of trades is being developed, which carries information as to the particular trades in question. The reader is referred to three volumes on occupational analysis entitled "Opportunities and Requirements in Local Occupations,"³ prepared and edited by A. H. Edgerton and others, for the guidance work in Detroit, Michigan. While this information applies to local industries, the analysis of trade requirements is sufficiently general to be of great value wherever the same trades are found. The methods of analysis⁴ are equally as significant as the particular

³Published by the Detroit Board of Education, 1922-1923.

⁴See also Chapter III for a detailed account of trade and job analysis as an aid in curriculum building.

analyses, for they suggest a similar technique to be followed by other workers in other cities for their own local industries. Bulletins by the Federal Government and by the University of California also carry this general type of trade information.

The tendencies toward a scientific attitude in industrial placement advocated by agencies outside of industry itself must necessarily work under somewhat of a handicap. It is difficult to get the intimate contacts with the machinery of industry which are fundamental to the most efficient results. Furthermore, suggestions made by outsiders are apt to be treated mercilessly if any slight defects or errors are found in them. It may be expected that when methods which are truly scientific and removed from the meshes of quackery have been adopted by industry itself, industrial efficiency will be forthcoming. In the meantime, excellent progress is being made in the experimental laboratory, and industry is becoming more willing to learn from acquired information as well as from bitter experience.

TENDENCIES IN INDUSTRIAL EDUCATION

Although industry has been slow in adopting the scientific method for the selection of personnel, education has also been lax in preparing its output for proper industrial placement. Such negligence was due in part to lack of contacts, and in part to an erroneous, but common belief that any pupil could be trained for efficient production in any trade or profession. In fact, conditions of instruction were made so uniform that universal preparation (or perhaps lack of preparation) may have been expected.

The first beginnings in a more fruitful approach have been made with the discovery that all individuals are not exactly alike with respect to the work which they can best perform. The full recognition of differences in innate ability has come largely through the use of general intelligence tests. The extent of such differences in children and in adults has already been discussed in an earlier chapter. Without attempting to explain fully the significance of such differences, discussion of the extreme types may be stated briefly.

Consider what would happen in society if the man capable only of unskilled labor under moderate supervision were to trade places with the physician or with the attorney. In his training he would be found incapable of mastering the necessary education. Or, granted that the training were possible, he would be unable thereafter to compete successfully with the other more gifted members of his new profession. He would be decidedly unhappy, also, to say nothing of the menace he would be to society. On the other hand, the man of high intelligence would find his labors decidedly distasteful in his unskilled work. He would have no exercise for his mental talents, and the lack of stimulus from contacts with other workers of his own mental level would be unfortunate, if not disconcerting. Aside from the fact that the particular work in which these two would find themselves, their social status and manner of living would tend to make both of them unhappy. The same conditions would also be true in lesser degree if men in other trades which demanded less extremes of intelligence were to trade places.

The mental differences which are known to exist in adults are to be found also to a certain extent among children. These differences affect pupils' progress in school and also determine in large part the different types of social relationships which are known to exist in society. Segregation of pupils differing in mental ability and in its correlated qualities is now being attempted in many public school systems. Through segregation, the tendencies of the different groups may be studied more effectively. Under the former plan of heterogeneous classification, the few exceptional cases which were known to exist in classes were considered to be in such a small minority that they were insignificant and unworthy of special study and analysis. Under the later plans of classification, the significance of intelligence, personality, application, etc., is being taken into account in planning the program of vocational guidance.

After a period of feverish experimentation with intelligence tests as a cure-all for educational ills, the scientific study of tests of special aptitudes was undertaken. With its inception has been initiated a new series of tests which promises to be as far reaching and comprehensive as the application of standard tests within the

past decade and as significant as the development and use of intelligence tests in the past five years. Only a few of the representative aptitudes tests will be mentioned here.

J. L. Stenquist has devised two forms of *mechanical aptitudes tests* particularly suited to boys.⁵ Test I consists of six exercises with ninety-five operations involved. In pictorial form are shown parts of bicycles, telephones, radio sets, autos, and a large variety of mechanical devices. These are presented in small parts in disarranged order, and the subject is to indicate how the parts are related by matching the various pairs of objects. For example, an auto tire pump labeled "3" is matched with an auto tire labeled "A." The "3" and "A" are matched together in the column provided at the right of the page. This test has a work limit of forty-five minutes. "T" scores and percentile norms are provided for ages ten to fifteen, inclusive, for both Tests I and II. Test I is well adapted to pupils of limited mental ability or even to cases of language difficulty, as well as to normal American children, since it is pictorial and constructed upon simple principles.

Test II consists of three exercises. Exercise I is similar to Test I. Exercises 2 and 3 consist of complete mechanical units, such as an electric door bell and a job crane. The various parts of these units are labeled with letters and the subject is required to answer written questions about the functions of the various parts of the unit, such as "Which part is the electro-magnet?" Reading is necessary, although the terms and vocabulary are as simple as possible. The author reports a correlation of $r = .84$ between scores and shop and science teachers' estimates of general mechanical aptitude. Performance on the tests is not affected very greatly by shop experience, since general aptitude for mechanics has stimulated an interest in mechanical devices which reaches far beyond the work bench in the schoolroom. The author has reported further that there is little or no correlation between scores on the aptitudes' tests and scores on intelligence tests. The various combinations—high intelligence, high mechanical ability; high intelligence, low mechanical ability, etc.—offer some very specific suggestions to those who are responsible for vocational guidance. These

tests are very well planned, and the process of standardization is commendable. They are certain to fill a long-felt need. They are also typical and suggestive of similar efforts in other fields.

The *Thurstone Clerical Test*⁶ consists of eight parts: error checking in fundamental arithmetic processes; error checking in spelling; cancellation test; letter-digit substitution test; classification of men by cities from a mixed list; classification of insurance policies with respect to amount, date, and kind; arithmetical problems; and matching of proverbs. While this test seems to have a higher correlation with general intelligence than the Stenquist tests, it also measures special aptitudes for taking exceptional pains with detailed work.

The *Freyd Journalistic Aptitude Test*⁷ consists of nine parts: checking the most important of two statements from the standpoint of best news; checking the best of three answers to problem situations facing a reporter; a completion test to be supplied from a story read by the examiner; selection of exact meaning of words; correcting misspelled copy; knowledge of antonyms; accuracy of report on an automobile accident from a picture of it; an information test; and a test of grammatical errors. While ability to pass this test with a creditable score is very dependent upon general intelligence, a certain type of judgment is required in qualifying for newspaper and journalistic work which is not found in all types of high general intelligence. The test shows that its author is familiar with the type of work expected from the journal worker or the cub reporter.

A very complete and recent work on tests of aptitudes is by Herbert A. Toops.⁸ The tests are divided under three heads: (1) ability with ideas, the I. E. R. Arithmetic-Reading Test or any standard tests of general intelligence; (2) ability with things, the Stenquist Assembly tests for boys and the I. E. R. Assembly Test for girls; (3) ability with clerical items and procedures, (a) higher level, the I. E. R. General Clerical Test, C-1, (b) lower level, the

⁶Published by the World Book Company, Yonkers, New York.

⁷Jour. of Applied Psych., March, 1921.

⁸Tests for Vocational Guidance of Children Thirteen to Sixteen. Teachers College Contributions to Education, No. 136.

I. E. R. Test, C-2. In his introduction the author says: "One of the greatest services of vocational guidance to children from thirteen to sixteen is to direct away from commercial high school, business colleges, and office work, those who have little or no chance of usefulness and happiness there. It will be very much safer to do this by the aid of the clerical tests than on the basis of an intelligence test alone." The extent to which correlations and other statistical devices were brought to bear upon the test results show how thoroughly Toops has attempted to isolate and evaluate single factors, and speaks highly for the importance of the investigation. After following through such a detailed study, one can scarcely be otherwise than optimistic that the possibilities of correct and trustworthy prognosis are very great and that the day of their realization is much closer at hand than any of us have hoped for or believed possible.

CO-ORDINATION OF VOCATIONAL EDUCATION AND INDUSTRIAL PLACEMENT

The tendencies toward the scientific method in industry and also in vocational education have been briefly reviewed. There remains for consideration the manner in which the work in these two fields may be correlated, so that the pupil in school may be trained and fitted to function properly in industry. The beginnings of this program are to be found in the classification of pupils upon first entrance to school under the various categories which are apt to affect his career. By the time the junior-high-school period is reached, the pupil should be so classified that he is getting definite training and direction along the general line of activities which he is to enter.

In order that the pupil himself may be considered by the counsellor, rather than merely the objective evidence about him, opportunity should be given the pupil to discover for himself his place in a level of occupations suited to his abilities. To this end there are being developed in many junior high schools so-called "finding courses," in which the pupil is given opportunity in the course of a year to try half a dozen or more occupations. The material and content offered in these "finding courses" are an excellent example

of this development. "Finding courses" should be arranged so that pupils will have experience with at least six or more trades or professions. After the pupil's choice is made tentatively, further opportunity should be offered for study and observation in his chosen field. Many objectives and qualifications of trades should be reviewed with sufficient emphasis that the pupils may make a fair choice and not be too easily influenced by merely superficial features of any trade.

The schools should have an information and placement bureau which enjoys the confidence of the pupils and also the closest co-operation of the employment agencies of industrial firms. The Cincinnati plan of having pupils alternate two weeks in school with two weeks in the factory serves to bridge a gap which has been dangerously wide at many points. A follow-up worker, who can adjust minor difficulties, should be in charge of pupils of low mental ability or unstable mental constitution. Verification of the school's diagnosis and the training of pupils along vocational lines will be carried on eventually to a high level of efficiency.

METHODS OF ANALYSIS

In order that the placement of the pupil should be in the light of complete information, not only should the results of the "finding courses" be used, but also the cumulative information gathered in detail throughout the pupil's school experience. Results of intelligence tests should be utilized, as well as records on educational tests, teacher's ratings, and scores on special aptitudes tests. These objective data should also be supplemented by ratings in socialization, leadership, and personality. Noteworthy incidents in the family history should be recorded. The development of rating plans and tests for all manner of traits will be undertaken in the near future so that the records may be definite.

The counsellor will have a complete and full report of the pupil's aptitudes and of his disabilities. There will follow from such records, experimentation upon all the significant factors in human existence which may influence the career of the future citizen. The attempt to eradicate undesirable traits should follow upon their exact measurement. Can selfishness be eliminated by

education? If so, by what method? Will the same method of elimination be universally applied? Will honesty be acquired through training? While the writer, from experience with many of the so-called 'undesirable' types of pupils, and from the analogy of the unimprovability of intelligence, judges such efforts rather pessimistically, he hopes that his anticipation will be proved wrong.

If we gathered at the present time all the information available about pupils, our progress in the direction of better vocational counsel would be materially improved. Although such information is based on judgments and incomplete data, it would be a step in the right direction. With such records would come improvement in the measurement of traits. It is safe to predict that our efforts in the direction of analysis and record of pupils are only in an early stage and that they are certain to rise very rapidly to a higher plane.

The program which has been outlined calls for careful scientific training for those who are to carry on work of vocational guidance and educational direction. The scientific methods and testing technique of the psychologists offer a happy means of approach to such training. Measurement in achievement and in intelligence is beginning to approach a degree of perfection which may become comparable with exact measurement in any other scientific field. It is partly for this reason that the training of the vocational staff is being entrusted in part to the psychologists. The psychologist also has a contribution in the production of tests of special aptitudes, in which work he is co-operating with tradesmen who are familiar with their own fields. In such a program of training, the psychologist should not presume to claim for himself full credit for the success of vocational education. Counsellors who are close students of human nature, co-ordinators and placement officers who understand the local conditions in industry, may well claim their share in the growing success of vocational education.

EXPECTED RESULTS

One of the most immediate results of a comprehensive and intelligent system of vocational guidance will be a better understanding of human relationships and of human limitations. The large

turnover in personnel, the traditional disagreement between labor and capital, unemployment among certain classes of society least capable of managing their own affairs with prudence, are glaring weak spots in our present social and industrial order. If the elements which cause these conditions can be analyzed and therapeutic work can be undertaken by responsible parties with scientific training, the status of labor will be materially improved. Industry will also benefit from improvement in efficiency. The present turnover of labor and the forced training of a continual stream of new workers are the despair of any employer. With improved efficiency, the attitude of industry toward the scientific method of personnel will be materially improved.

Finally, it may be expected that the individual worker will find his status much happier under the new order. His abilities and also his limitations will be known to himself and to his employer. He will have a fair opportunity to try his talents and to be satisfied that his own field has been found. All the traits in which he is known to be weak will have been diligently trained for improvement. Provoking elements in personality will be overcome or recognized for what they are. At present, they form an effective smoke barrage behind which the real worth of the worker may be concealed. A new and changed social life will follow and thus will be provided a state of mind conducive to better co-operation.

SUMMARY

Analysis of the history of industrial development, its present status, and its future possibilities may be summed up chiefly under the following points:

1. Rapid and significant changes have occurred in industry which workers have been relatively unprepared to meet easily.
2. These changes not only affected industry, but also altered the social order by breaking up personal contacts between the employer and employee. The worker was also removed from his home community to a new and strange environment.
3. It is only very recently that a scientific system of measurements has been proposed for a wiser and more fortunate selection of personnel.

4. The analysis of industrial occupations and tests for measurement of efficiency were greatly stimulated by the application of scientific personnel methods in the United States Army in the late war. These studies were reported by Chapman.

5. Out of vocational education in the public schools have come detailed occupational information by Edgerton and others. Such analyses, and the trade testing in the army, deal with information about occupations and levels of efficiency which may be required in them.

6. One task of industrial education is to disseminate to pupils accurate, detailed, and impartial occupational information, and thereby provide pupils with guide posts to their own chosen fields.

7. Tests of specific aptitudes are being developed to measure the chances of success of pupils who ultimately will engage in certain occupations. Tests of mechanical and of clerical aptitudes already standardized give promise of more to follow. A careful technique of examination is urgently needed if this new type of measurement is to have a fair degree of success.

8. All pupils should be provided with contacts with actual jobs in industry before leaving school (such as the Cincinnati plan provides) and should have opportunity to take several "finding courses" in the junior high school. Pupils, teachers, counsellors, parents, and all concerned will be much better satisfied if choice of occupation is made in the light of such experiences.

9. It is imperative that a system of 'follow-up' be undertaken, so as to verify the analyses and prognoses which have been made. This fundamental step involves long and patient research in all types of trades and occupations. The difficulty of the task does not deter resolution in its execution.

10. The individual pupil must be analyzed from as many points of view as there are significant factors in his make-up. Abilities of all kinds, aptitudes, personality, health, and inclinations must be measured and evaluated independently and in combination.

11. Vocational industrial education deals with the final product of education. Education as a whole will be judged largely on how well its product adjusts itself to society, rather than upon marks of

proficiency in academic or trade subjects. Therefore, such education is a very integral part of the complete education of the youth and not a separate unit designed to function by and of itself.

12. The success of industrial education depends in large part upon how thoroughly the principles of scientific education are adopted in its procedure. The auspicious beginnings speak well for the future.

CHAPTER IX

TRAINING FOREMEN AND OTHER LEADERS IN INDUSTRY

A. INTRODUCTION

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As we study the problem of living and making a living, each advance we make towards an ideal democracy seems but to open new problems and difficulties. Therefore, while our modern industrial process of securing food, shelter, and clothing has brought untold boons and blessings, it has also given birth to many ills which were unknown to our forefathers of a handcraft age.

In modern industry all scientific planning of production, all policies regarding personnel relations and working conditions must be carried to the rank and file of the workers through a subordinate. The importance of this subordinate's position has only recently been recognized. This key position of modern industry has fallen upon the shop foreman. He is the link that holds management and worker together. The foreman stands in this unique position of being the first man (of an executive nature) next to the actual job of production. In industry this minor executive is known as a supervisor, general foreman, foreman, forelady, assistant foreman, gang leader, second-hand quarterman, and leaderman. In general, his selection has not been made because of any special leadership ability. He may have received his promotion because he was "a good fellow" and would always stand by the firm. Again, his jump from the bench to the foreman's desk may have been a reward for many years of steady and faithful service.

Before the World War few foremen received any special training for their job. The majority of the men now holding this position in modern industry never graduated from an elementary school and only a few have had high-school training.

THE DIFFERENT PHASES OF THE FOREMAN'S JOB

Except in small shops and emergency cases the foreman does not take part in the actual making of the product. His work is mainly concerned with the problem of making the factors—materials, machines, and labor—work together in such harmony and efficiency that the maximal production and standard quality of the product is maintained. He may have shared in the planning of the work schedule, but his larger task lies in seeing that the program of production goes along according to the work schedule.

The accompanying chart¹ illustrates the foreman's position in modern industry and gives the details of the three phases of his job:

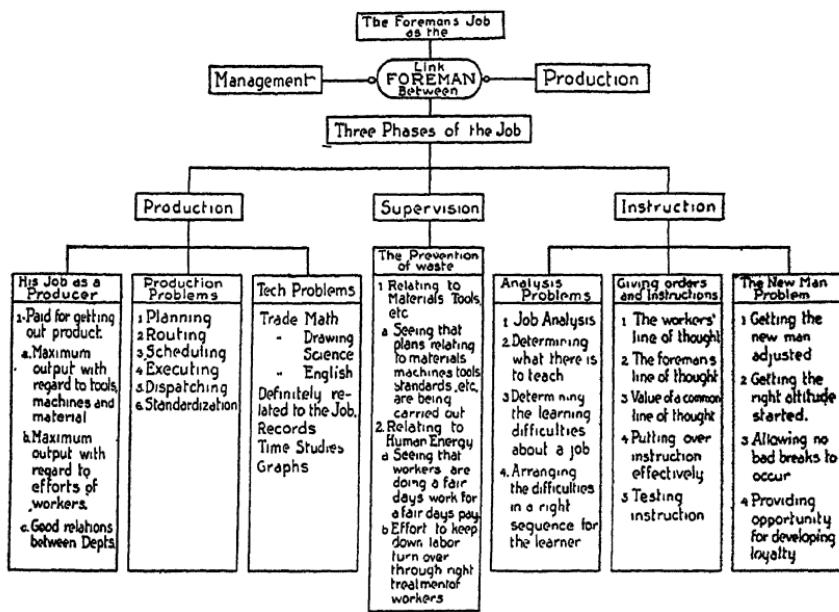


CHART 1 THE FOREMAN'S WORK

¹From an article by the author on "The foreman and his job." *Industrial Arts Mag.*, December, 1922.

ORGANIZED EFFORTS IN FOREMAN TRAINING

To-day we have two distinct types of foreman training in operation. The first type deals with a course which aims to cover the general principles of foremanship. These courses cover problems in production management, economics, business administration, studies in human relations, science, industrial history, technical training, and even public speaking and salesmanship. Most of these courses have been organized by private commercial schools and are administered through lecture courses and correspondence instruction. All of these courses are more or less of an inspirational type and, on the whole, have rendered a good service. They have awakened the foreman to the fact that work is a co-operative venture. They have stirred his imagination and broadened his vision, so that he handles his problem with a larger spirit and a sounder judgment. The courses, however, have failed in many cases, because those who organized them failed to realize that the average foreman cannot take generalities and work out his own specialized application. Courses in scientific management and efficiency are good vocational training for the man who is in direct line for promotion to the manager's job. The average foreman, however, has reached his final goal when he becomes a foreman, and any training given him should be to make him a first-class foreman and not a third-rate manager. The daily round of concerns and duties of the foreman's job will provide plenty of problems to be solved, plenty of real situations calling for study and investigation, without lapsing over into the field of the manager's job.

The second type of foreman training classes deals with the actual problems of the local plant. An analysis of the foreman's job in any factory will reveal enough unsatisfactory conditions and errors to make a real course of study. The analysis of common errors and of ways and means for eliminating them becomes the objective of this type of training.

Getting down to a actual analysis of the things that 'gum the works' gives many opportunities for seeing ourselves as others see us. It is also a good experience for the foreman to see not only what his brother foremen have to face in keeping the product moving according to schedule, but also to appreciate what the sales

force, the engineering department, the employment department, and the accounting department of his company are doing to make the wheels of production turn.

This type of foreman training has given some splendid results, and every industrial concern that has organized training along these lines can point to economies in material, increased life of equipment, and better personnel relations.

TYPES OF METHOD

A number of methods, exhibiting varying degrees of success, have been tried in foreman training. The four principal methods now in practice are: (1) the lecture method, (2) the conference method, (3) the text study method, and (4) the field training method.

The Lecture Method

The giving of lectures is easy to operate. It is economical, as it can be used with large groups. On the other hand, it is very ineffective in stimulating real thinking. It is not well adapted to the average type of foreman. The interest is apt to be a temporary affair. The correlation between theory and practice is usually low.

The Conference Method

This is simply an organization for handling certain types of objectives with groups of foremen. Its informal nature invites expression on the part of the foreman. It gives a number of real opportunities to participate in discussion. It encourages self-analysis and develops a technique of analysis. It focuses attention upon the difficulties of the daily job. It assures a training course of great flexibility. On the other hand, the discussion may wander far from the objective and get nowhere. Personal matters of a disruptive nature are apt to creep in. The conferences may develop into purely "experience" or "testimony" meetings.

The Text Study Method

Two types of text material are used: first, there is text material which has been developed and presented by the company; second, there is text material prepared and presented by outside agencies.

Some of the common questions asked about this method are: "Does the foreman get what he needs?" "Are the benefits of book study lasting?" "Will the foreman study with enthusiasm and will he follow his study through to completion?" The answers to these questions depend upon the objective of the course, the style of the presentation, and the length of the course.

A very large proportion of foreman training carried on in the country is under this text study plan. Sometimes it is supplemented by lectures. A large number of companies testify that their men have been benefited by these studies. On the other hand, there are companies who rather frankly state that, while there may have been improvements of a temporary nature, very little permanent growth has come from the work.

The Field Training Method

Developing supervisors and minor executives on the job is possibly the oldest method of training. It involves intelligent selection of the men who are to be given special attention. Starting with the assignments of special jobs, the man is gradually given more and larger responsibilities.

Training of this kind need not be systematic, although there is no reason why it cannot be combined with any of the other types of training just mentioned or any type of industrial education.

The chief advantages of this type of training are that in the survival of the fittest some good foremen are developed, that it is extremely flexible, and that it can be operated with a few men or a large number of men. The atmosphere is distinctly that of a job; the school idea is entirely eliminated.

THE IMPORTANCE OF THE TEACHER, OR LEADER, IN FOREMAN TRAINING

It will be noticed that in almost every type of foreman training, the success or failure of the method will depend very largely upon the leader. A real leader of men will sooner or later get good results, while a poor teacher, even under the most favorable condi-

tions and with the best method, will never get very satisfactory results. The training of leaders, or teachers, is therefore a tremendously important part of foreman training.

THE FOREMAN IN A MODERN INDUSTRIAL PLANT

Perhaps enough has been said to show how important a place the foreman occupies in our modern industrial plant. He is at present doing a great service. The good foreman is worth his weight in gold, but he is often very much underpaid, and he is often placed in that most undesirable situation of being kicked about between the unreasonable demands of a superintendent and a lazy response from a group of dissatisfied workers. He is often "between the devil and the deep sea" in his efforts to serve the two masters of capital and labor, and he is forced to isolate himself from both of these forces because he seems to serve neither. He deserves very much better and more reasonable treatment. More and more, we are going to realize the necessity of giving this man special training. His job is one of the hardest, and yet one of the most important of the minor executive positions, and we shall not have the ideal man for this job unless we have trained him.

Merely convincing the superintendent or general manager that foremanship training is needed is no guaranty that constructive results will be secured, if the foreman has not also been converted to the plan. Any successful plan needs the continual help and nursing of some man whose special job it is to see that the task is done right. Therefore, any plan of foremanship training should after all be a continuous process, rather than spasmodic, emotional proddings, and should gradually develop into a system of regular conferences with the executives. The logical man to do this work would be a person connected with the regular training department of a company, if he has the necessary point of view, qualifications, and the respect of the men. If this plan cannot be carried out, it would be well for a plant to make connections with a recognized expert connected with the Federal Board for Vocational Education or with the vocational education department of the state university and get the work started by their aid.

The reports that comprise the remainder of this chapter are submitted by men who have had actual supervision of foremanship training work carried on in co-operation with the extension department of their respective training institutions. These reports show what has been accomplished in this field of extension training and are representative of work that is being done in many other universities in this country.

B. FOREMAN TRAINING AS CARRIED ON BY THE VOCATIONAL EDUCATION DEPARTMENT OF OHIO STATE UNIVERSITY

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Two distinct phases of the foreman training problem have been given attention by this department during the past four years: (1) training foremen to be competent instructors of men under their supervision or direction, and (2) training industrial executives to an intelligent appreciation of the foreman training problem, and, where possible, to be able to organize and conduct foremanship classes among their own foremen.

TRAINING INSTRUCTOR FOREMEN
Objectives

In the work of training instructor foremen, the object is to build up teaching ability in foremen.

Methods Employed

Our experience thus far has convinced us that different methods must be employed in different plants, the nature of the industry probably being the chief determining factor. The type of foreman found is also an important factor. In some cases real success has come through the conference or round-table method when dealing with twenty or more foremen at a time; while in other cases our best results came after we cut the groups down to a half-dozen in number and took up special teaching problems for short intensive consideration. In general, it may be said that when dealing with managerial problems, the larger group is most satisfactory, but when considering specific instructional phases of the foreman's job, the smaller and more closely classified group brings better results.

Regardless of the numbers in the groups, all conference and class work is conducted in the plants, and usually in part, or entirely on company time. We have found that better results come

The major part of this work was carried on while the writer was connected with the University of Cincinnati.

from an extended, rather than a brief period of training, *e.g.*, a year, rather than three or four months.

Sample of Results Obtained

In one large plant, where, under the topic of leadership, numerous thought provoking questions were used by the leader, the men in the group contributed as follows:²

1. Traits characteristic of the good leader
 - a. Confidence in his men
 - b. Is co-operative
 - c. Has respect for others
 - d. Has initiative
 - e. Is fair
 - f. Knows his work
 - g. Has ability to see three sides of the question
 - h. Is honest
 - i. Says "come on," not "go on"
 - j. Can discipline well
 - k. Has ambition to be better
 - l. Has ability to train his men
2. How poor leadership affects production costs
 - a. Causes disorganization which results in
 1. increased number of accidents
 2. increased turnover
 3. actual decrease in out-put
 4. greater waste
 5. increased absence
 6. poor workmanship
 7. general indifference which in turn causes
 - (a) misunderstanding
 - (b) dissatisfaction
 - (c) lack of 'pep'
 - (d) carelessness
 - (e) loss of orders

Outstanding Difficulties

1. For the leaders in such work to win and hold the respect and confidence of the foremen, who are generally suspicious at the start.
2. To teach foremen to analyze their personnel and teaching problems.

²This work was under the immediate direction of R. W. Jenkins of Hamilton, Ohio.

3. To get whole-hearted co-operation from the management.
4. For the leader to get close enough to the plant's problems to make possible an indirect, if not direct, discussion of them at the conferences of foremen.

TRAINING LEADERS FOR FOREMANSHIP CONFERENCES OR CLASSES

Objectives

The purpose of this work, as stated in part above, is to train executive leaders—men who rank higher than foremen—to an appreciation of the meaning of, and need for, foreman training, and to equip them, as far as possible, to conduct training classes for their own foremen.

Methods Employed

1. The personnel of the group consists at first of executives who rank higher than foremen in their respective plants; later, foremen themselves are asked for.
2. By means of charts, analyses, diagrams, etc., the executives are led to see not only what is demanded of the average foreman, but also what he must be in order that he may measure up to the demands. A chart of possible foreman attributes is used in this connection.
3. The kind of help foremen need is emphasized by means of dozens of everyday problems which have been handed in by foremen from other plants.
4. The practical problems referred to in "3," and others added by members of the group, are organized for class or conference use.
5. The leader organizes units of material and demonstrates in a series of sessions, with the help of foremen who have come in, how foreman training may be carried on by plant executives.
6. One or more of the executive group volunteers to take charge of the foreman group for a period. The leader helps him get ready for this work.

7. Following each demonstration lesson or conference, the meeting is thrown open for general discussion as to why certain things were done or left undone.

8. Follow-up is carried on in plants where progressive members of the group have started foreman training work.

Sample of Material Used

General Topic: Managing Men

Specific Topic: Analyzing Problems

As in medicine and law, so in all lines of activity, the degree of success an executive attains varies directly as his ability to analyze his problems or difficulties and find correct methods of solving them. Genuine success is never attained by any other method, though occasionally one sees evidence of apparent success that has resulted from mere accident. These cases, however, are the exception, not the rule, and should not be heeded by those who are in search of the laws of success.

It follows from the above statement that since two definite demands are placed upon each executive, at least two possibilities of failure obtain. He may fail because he analyzes poorly, or he may fail because he cannot find the correct method of solution. In terms of the medical man, he can fail in either his diagnosis or his prescription. It has been my observation that poor executive ability is more often due to indisposition or inability to go to the bottom of the difficulty than to inability to find a satisfactory solution for the difficulty when it has been located.

The specific object of this unit is to set forth a technique of procedure when plant problems appear. It will suffice, therefore, to indicate the simple outline employed and one or two typical analyses.

It is recommended that the leader shall not depend entirely upon the contributions of the foreman. On the contrary, he should always 'have something up his sleeve' in the event that things do not happen speedily enough. But he should also not be too hasty about suggesting, so long as extracting ideas from them is not too laborious. It must always be borne in mind by leaders that in proportion as the members of the group contribute, in like proportion is self-improvement taking place.

COMMON DEFECTS OF WORKERS

Defects	Possible Causes	Suggested Remedies
Wasting time in getting to work	<p>Slow type of foreman, the kind who always travels with an alibi</p> <p>The worker dislikes his job</p> <p>Worker is too lazy, or possibly is just slow and easy going</p> <p>A flat wage system</p> <p>Worker feels that fellow-workman is better paid and better treated than he is</p> <p>Worker fears that he will run out of work</p> <p>Worker 'has it in for his foreman'</p> <p>Worker fails to plan ahead, to leave things so that no time need be lost in getting started next time</p>	<p>Either improve present foreman or get a new one. Business cannot afford to have bad examples before the rank and file</p> <p>Either broaden worker's conception of the job's significance, or transfer him to another.</p> <p>Put more immediate and more constant pull into the wage system. Institute an unvarying policy of stimulating worker to overcome objectionable habits</p> <p>Devise wage system which dovetails more closely with human nature</p> <p>Base wage system upon complete job analysis showing respective amounts of skill, knowledge, responsibility, etc., each job requires</p> <p>Remove the curse of seasonal employment, undoubtedly one of the greatest hindrances to industrial competency</p> <p>Have foreman correct conditions if possible, otherwise transfer worker. Foreman should train men so that this practice cannot be indulged in consistently. Better foremanship is the prime need in this case</p>
Carelessness on the job	<p>Worker not at the job for which he is best adapted</p> <p>Worker does not understand instructions given by foreman</p> <p>Disregard of instructions by workman</p> <p>Natural fatigue on worker's part</p>	<p>Make job analysis; also man or worker analysis and shift worker to job for which he is suited, or create different job for him where he is</p> <p>Train foreman so that he knows how and when to give instructions; also so that he sees to it that the worker understands</p> <p>Discipline in accordance with the offense committed</p> <p>Lighten requirements of job, if analysis reveals that they are too great. Seek to promote more regular habits in workman. Shift worker to another job. Let worker lay off for awhile</p>

Defects	Possible Causes	Suggested Remedies
	Worker lacks confidence in himself	Foreman should offer distinct encouragement. Lead worker to believe that he can do the work satisfactorily
	Worker is too familiar with the job; it has lost its novelty	Shift to another type of job if worker has 'gone stale.' There is no good reason why worker should not 'go stale'
	Worker is too anxious to increase the size of his weekly wage	Let foreman tactfully point out cost of such carelessness to company and add that no doubt it was quite unintentional; if not this, then penalize worker by cutting wage for error committed. Possibly a severe reprimand will suffice
	Worker is ignorant regarding the necessity for great care	Foreman should point out to him why care is imperative in connection with the work
	Worker is naturally reckless, takes pride in doing daring things though he does not desire to injure himself or others	Provide course of instruction. If this proves useless, discipline of one or another sort will have to be resorted to. As a last resort 'fire' him

Other common defects in workers which may be similarly analyzed are:

Chronic cases of tardiness and absenteeism	Dodging unpleasant jobs
Promiscuous visiting	General untidiness about shop or office
Loafing on the job	Wastefulness
Using objectionable language	Quarrelsomeness
Stirring up trouble	Lack of co-operation

Outstanding Difficulties Met

1. In the main, industrial executives are looking for a cure-all, a prescription, if you please, that they can have filled and from which immediate results will come. When the statement is made that they must not only prepare to do this foreman training job, but they must also select, organize, and 'put over' the subject matter, half or more of them get 'cold feet' on the spot.
2. Managements are not, as a rule, sufficiently 'sold' on the proposal, as a result of which very frequently a 'sold' executive has his hands tied when he tries to put his ideas into practice. Un-

doubtedly, the managers are the chief obstacle in the way of foreman training to-day.

3. Relatively few industrial executives have the attitude which is indispensable to successful leadership of foreman classes. The prevailing tendency among them is to give orders to their foremen, rather than to discuss matters with them.

C. FOREMAN TRAINING AS CARRIED ON BY THE VOCATIONAL EDUCATION DEPARTMENT OF INDIANA UNIVERSITY

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Indiana University made the first start in the United States, so far as the writer knows, in the organization of Factory Instructor Conferences as a part of a publicly directed activity under the Smith-Hughes Law. The work was started incidentally in connection with the vocational teacher training classes conducted by the University in the fall of 1918. It was continued experimentally by meeting groups of foremen in the individual factories themselves, beginning in February, 1919. At that time a tentative approval was received from both State and Federal Vocational Education Departments, and since that time the official endorsement and cordial support of City, State, and Federal Boards have been given to this work. Local directors of vocational education have assisted in interesting factory managers in their communities in such activities.

The university has also appreciated the hearty co-operation received from these factory managers in carrying out the conferences with their foremen. The men have realized that the public interest, as represented by the state university, and the factory interest, as represented by the management, are both concerned with the promotion of better training of workers. So they have been glad to arrange for the proposed series of meetings convenient for the university representative and for the entire group of foremen and other department heads.

PRESENT STATUS OF FACTORY TRAINING

Visits to plants, talks with factory managers, and discussions with foremen and department heads have shown the following status in the development of a training program for industrial workers in Indiana.

Some plants still make an effort to hire men ready-trained for production, but it is becoming more and more evident to them that

this practice must soon be almost entirely abandoned (except in certain industries grouped in a single community). One of the reasons for this is the lack of thorough mechanics with well-founded training and experience; another is the high degree of specialization which is continually developing in factories, making necessary an intensive preparation for such employment; a third reason is the unique character of work required in each factory, making it difficult to adapt a worker immediately from one plant to conditions in another plant, even where the same type of production is handled. Even the hiring from one plant to another does not produce new skilled individuals. It merely shifts the burden of providing the training.

In most of the plants where university contacts have been established, the foreman is largely responsible for the training of employees. These plants vary in size from a few hundred to several thousand workers. The foreman's duties in many of the places are not clearly defined, although in most cases it is assumed that he is in special charge of the workers in his department. Thus, the line of least resistance, as well as shop tradition, suggests to the management that the introduction of the worker to his job shall be in the hands of the foreman. He is made responsible for trying out the prospect, either watching him from time to time as he adjusts himself to the needs of the work, or giving him more or less assistance in this adjusting process. In a few cases, the foreman has realized the importance of the teaching part of his job and has made himself into a really effective shop teacher, capable of understanding the men and knowing how to 'put over' such instruction as is necessary to make an intelligent, skilled, interested, alert, and perhaps, ambitious worker.

In some factories a superintendent or manager or educational director has taken the responsibility for conducting frequent foremen conferences, where teaching problems are discussed and successful and unsuccessful teaching experiences exchanged. This practice of holding weekly, bi-weekly, or monthly conferences is becoming more common in Indiana factories, and where such conferences are held, the training program usually gets its proper consideration.

CO-OPERATION WITH PUBLIC INSTITUTIONS

Many Indiana factories are co-operating with the local schools in the promotion of a public vocational education program.

Reports have indicated also that a real service has been rendered to industry and to the betterment of workers in industry through the conduct of foremanship conferences by the State University as just described. Foremen have realized the need for a more sympathetic and definite study of human nature and of the principles of teaching built upon this study. They have come to realize that there are tricks of teaching as well as tricks of various trades, and that more satisfactory training is possible where such teaching devices are used. More definite listing of the details of shop jobs has been practiced, and the teaching of these details has been presented more intelligently, and followed up more patiently than before. Foremen have succeeded in developing an interest in the job, as well as an ability to do the job, and through this, have apparently cut down somewhat the labor turnover in their plants. Statements have been made that there is better feeling between the men and the foreman and the management, and more desire to co-operate in promoting their mutual welfare. The foremen, themselves, have taken the teaching part of their work more seriously, and have made a more definite study of their own instruction problems. Through all of this, the main object of the university's efforts is being realized—workers better prepared for employment through better teaching.

All of this field service with industrial plants has recently been transferred from Indiana University to Purdue University, the state's engineering and agricultural college, following a recommendation in the Indiana State Survey that the training of industrial teachers be concentrated in one institution. It was felt that such service fits best into a complete and consistent program connected with the engineering and educational activities carried on by Purdue University. This state-wide Factory Instructor Conference program for Indiana is now being developed by Purdue. Plans are under way for an enlarged service to the industries and industrial workers of the state in the building up of a fuller indus-

trial training program, providing a training for present-day factory occupations. The public schools may furnish a foundation training for certain recognized trades and in some locations they may give a specialized training for a few of these factory occupations. At present, they are reaching but a small percentage of those actually entering the factories, so a large responsibility rests upon the factory itself for training its own employees. The state university can help promote better factory training.

D. FOREMAN TRAINING AS CARRIED ON BY THE VOCATIONAL
EDUCATION DEPARTMENT OF THE UNIVERSITY
OF MICHIGAN

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The educational work being carried on among foremen in Michigan was started during the period in which manufacturers were searching frantically for any scheme which would insure them a reasonably contented working force. Numerous devices to secure the full co-operation of their workers, such as shorter hours, higher wages, and better working conditions, had been tried without much success.

This feeling of uncertainty was so general among manufacturers that at the close of an address on "Vocational Education," given by Professor G. E. Myers, of the University of Michigan, before the Rotary Club of Grand Rapids, some of these men approached him to see if he could offer any suggestions which might lead to the creation of a better attitude on the part of their men toward their job and toward their employers. Following the suggestions of this meeting, Dr. Myers organized a class composed of superintendents and managers from eight different factories. The class met six times, and as a result of their discussions, it was found that the foremen needed instruction in a number of other questions besides those affecting the relations between employers and employees. Our experience has taught us that these questions may be classified under two general heads; first, those which are general, and which may be discussed by an itinerant teacher who need not necessarily be thoroughly familiar with each foreman's job; and second, those which are concerned with problems of specific interest to one foreman, one group, or one trade, and which should be discussed by a teacher who is constantly in touch with the specific problems of the group he is dealing with.

The nature of the organization of a state university made it impracticable for the University of Michigan to station a representative in each community where work might be done for the purpose of studying and dealing with the specific problems of

each locality. Consequently, an itinerant teacher was assigned the task of leading the conferences on the questions included in the first group mentioned above, in various cities of the State. This work was carried on for two years, 1919-1921, and its value was so impressed on the manufacturers that many of them are continuing the work in their own factories. In addition to this, a group of manufacturers in Grand Rapids presented a rather imperative request to the board of education of that city for a permanent full-time instructor who could continue the work and extend it into the second field, which entailed a more detailed study of the specific problems of their factories. In response to this request the board of education secured Mr. Arthur F. Dodge, from the United States Rubber Company, to carry on this work. Mr. Dodge had been principal of a high school and had done training work for the United States Shipping Board before he took charge of the training of foremen for the rubber company.

In order to convey some idea of the material being used in Michigan, outlines of the courses of training for foremen are submitted. Many of the topics in Course I will be found also in Course III. In Course I the members of the class may come from a number of factories, while in Course III they come from one factory and have a common interest.

With reference to Course II, specialization of modern industry has resulted in foremen, as well as workmen, in large plants being closely confined to their own departments, with the outcome that men in one department are often ignorant of operations and methods in other departments. The objective of this course is to make the foremen familiar with the most important operations and methods throughout his own plant, so that he understands his own job in its proper relation to the factory as a whole.

Course I. Topics which apply in any foreman's job and which are treated generally

(Topics for study and discussion)

1. The organization chart
2. Analysis of foreman's job
3. The selection and training of foremen
4. Hiring and firing
5. Handling men

6. Training men
7. Systems of payment
8. Production
9. Industrial democracy
10. Correcting wrong thinking
11. The company's policies
12. Planning work
13. Securing and using suggestions
14. Scientific management

Course II. Topics which apply specifically to a selected group

For Furniture Workers
(Topics for study and discussion)

1. Properties of wood
2. Kiln drying
3. Cutting and machine room
4. Glue and veneering
5. Cabinet room
6. Finishing room and finishing materials
7. Rod room
8. Engineering department
9. Industrial relations department
10. Planning department
11. Accounting and cost department
12. Purchasing department
13. Selling

For Metal Workers
(Topics for study and discussion)

1. Iron and steel
2. Alloys of copper
3. Foundry
4. Machine shop
5. Pressing and stamping
6. Tool making
7. Polishing, buffing, and plating
8. Assembling
9. Industrial relations department
10. Engineering department
11. Planning department
12. Purchasing department
13. Accounting and cost
14. Selling

(It will be noted that the six topics at the end of each group are the same in each case. In every case these are dealt with from the point of view of the factory from which the foremen have come.)

Course III. Topics which are general, but which are considered from the standpoint of the factories represented in the classes

(Topics for study and discussion)

1. Analysis of foreman's job
2. Organization chart of department and delegation of duties and responsibilities
3. Storage and care of raw materials
4. Keeping the right amount of stock on hand
5. Scrap and spoiled work
6. Lay-out of equipment
7. Lay-out of equipment (continued)
8. Methods of moving goods
9. Scheduling
10. Production records
11. Wage systems
12. Main elements in cost of labor turnover
13. Value of turnover records
14. Causes of turnover
15. Welfare versus sound industrial relations' policies
16. Fitting workers to jobs
17. Training the worker
18. Non-financial incentives
19. Employee representation

CONCLUSIONS REGARDING THE MICHIGAN EXPERIMENT

1. There are two types of work which may be carried on among foremen; (a) that which is general in character, and (b) that which is of specific interest to certain groups.
2. An instructor or leader who cannot remain in one place long enough to make a study of local conditions and problems cannot hope to do more than introduce the work. His field lies in the type of work mentioned in 1 (a) above.
3. It is just as much a duty of a local board of education to provide classes for foremen as it is to provide them for machinists, printers, or draftsmen. While the state or university may aid in the development of the work, the responsibility of providing adequate training is essentially a local one.
4. The state department of public instruction or the state university may provide valuable service by carrying on classes for

leaders—these leaders to carry the work over to the foremen in their community.

5. The greatest care must be exercised in selecting leaders. The wrong type of person may wreck the enthusiasm of a whole community for the work in one meeting.

6. The number of men in our classes has varied from twelve to forty, but it has been found that the best work can be done when the number in the group does not exceed twenty.

7. Excellent work has been done in classes held on the employer's time, but it is felt that many foremen do not benefit as much from such classes as they do when their minds are free from the responsibilities of their shop. Because of this, as well as for other reasons, it is our opinion that classes are more successful when held outside of working hours.

8. It is unwise for the employer to require foremen to attend the meetings. Attendance should be voluntary. If the leader is of the right type, the men will continue to attend; if he is not, the reaction of the foremen will not leave him long in doubt about his lack of success.

9. The problem of recruiting classes is one which may be handled in different ways depending on the community. In Michigan the conclusion has been reached that, if the work is to be fully effective, the active co-operation of the employers is necessary. This must be obtained by convincing the employer that your philosophy is sound and that you have something to offer which is of real value.

After the co-operation of the employer has been obtained, it is a simple matter for him to secure an invitation from his foremen for you to present your proposals to them. While you are doing this, make it perfectly clear that the work is independent of the manufacturers' association, that attendance is entirely voluntary, and that you come as a conference leader, rather than as a teacher. Throughout your selling campaign, it is wiser to understate, rather than overstate what you hope to accomplish.

E. SOME CONCLUSIONS REGARDING METHODS OF FOREMAN TRAINING

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As may be noted from the several reports, our experience in the training of foremen up to the present time has pretty clearly indicated that there is no one way of getting at the job. We have, on the one hand, the conference method, involving no set program, but developing a program which very closely fits into the interest and special requirements of a given group of employed foremen. We have, on the other hand, the more general specific programs based upon a study of weak points in the foremanship work. We have, further, the organized training courses involving definite text material, such as has been put out by the Y. M. C. A., The Business Training Corporation, and the American School.

In view of this, it has seemed worth while to endeavor to summarize the various plans for improving foremanship.

TRADE EXTENSION FOREMANSHIP

By trade extension foremanship is meant training to increase the ability of men already employed as foremen. In general, this has been attempted in two ways: first, by the use of organized training courses, such as those conducted by a number of private institutions; second, by the conference method with a more or less elastic program. That both methods possess advantages is indicated by the fact that advocates of both can point to successful work. That each device possesses disadvantages is also indicated by the fact that unsuccessful results have been secured in some cases.

The acid test as to the value of any plan for improving foremanship lies in the degree to which better foremanship is secured in ways which can be traced to the training work. Whatever the special form, practically all plans can be referred to one of two types: organized courses or conferences. Organized training courses have usually been based upon some sort of an analysis of

the foreman's job from which there has been developed some sort of a topical outline. This analysis has usually been made by persons holding positions above foremen's jobs.

On the basis of this outline there has been prepared a text or a set of 'notes,' usually accompanied by some form of problems, questions, or other devices intended to promote the ability to apply the more or less general principles set forth in the text to the specific problems of each foreman under his own special conditions. When such work is properly carried on, it is often accompanied by considerable group discussion directed by a qualified instructor.

The objections to the general organized foremanship course, to which attention has been shown, commonly include the following:

1. A standardized course does not fit closely into the special conditions of organization, policy, etc., in any given plant or given occupation.
2. Many subjects are included in most standardized courses which really deal with the duties and responsibilities of high officials.
3. Many foremen have lost the habit of book study, and after a day's work are disinclined to attack 'home work.'
4. The majority of these courses deal largely with the technical and production side of industrial work. A competent foreman is already familiar with this side of his duties, whereas he is less equipped to deal efficiently with his job responsibilities on the human factor side.

It is fair to assume that success or failure in the use of standardized courses, as in any other piece of work where human elements are involved, depends upon the special type of foremen, the special type of organization under which they work, the ability and qualifications of the instructor, and the basis on which men are promoted to foremanship under the policies of the employing concern.

The *conference* method is the second general device for trade extension foremanship. It has been frequently described by different contributors and in other publications, and hence no long description is necessary here. So far as the writer knows, it orig-

inated in studies and recommendations made by a group of foremen in the Harrison plant at Philadelphia.

The results of this study appeared in Bulletin 52 of the Federal Board, Parts 1 and 2, about four years ago. This Board has continued its study of the conference device, since no other agency seemed to be in a position to carry on this piece of research work, while the development and presentation of organized courses was in capable hands.

The conference plan has been presented to many representatives of industry and to many state officers since it was first worked out. In addition, a number of such men have been given training in carrying on conference work, notably at the Oswego Normal School under the New York State Department of Vocational Education, and through a number of conferences held by the Federal Board in different parts of the country.

As a result a considerable number of men have conducted conferences in a wide variety of industries. As would be expected, they have met with varying degrees of success, but on the whole, a sufficient amount of success has been reported fully to warrant consideration of the conference as a feasible scheme.

The net results of these experiments have clearly shown that conference methods will succeed only where there is opportunity for free discussion and where the relations between the general management and the foremen are good. It should not be attempted under any other conditions. Where it has been attempted under such undesirable conditions, but little good has been accomplished, nor could other results be expected. It is perhaps a question if under such conditions any more good would have been accomplished through a standardized training course.

The conference method, as originally proposed, was intended to deal entirely with groups of foremen without any representatives of the management taking part in the meetings. Subsequent experiments have modified this idea. A number of conferences have since been tried where the management 'sat in' with the foremen. Where confidence and good relations existed, this has apparently worked well.

Another modification of the original idea has been a series of parallel conferences with foremen on the one hand and the management on the other. At the management conference the same points were taken up which had been taken up with the foremen, but were discussed from the angle of the management. In such management conferences, however, no statement has been made as to what was said in discussion in the foremen's conferences.

On the basis of conference work carried on in approximately fifty plants by nearly as many different men, results have been satisfactory in roughly 90 percent of the cases. The other 10 percent, where results were unsatisfactory, were apparently held under adverse conditions which, had they been known in advance, would have indicated that conference methods should not have been attempted.

As this work has developed, it has been found that it is quite desirable that a conference leader should have some notion of what is likely to come up in discussion, and hence that it is worth while to combine in some part of a classified inventory the various responsibilities of foremen.

Material of this kind was prepared and published in Part 2 of Bulletin 52 of the Federal Board, with the specific statement that it was merely suggestive of the sort of material that might come out in discussion, and to that extent would be of service to a conference leader. Others have, since then, still further compiled, classified, and published similar material for the same purpose, *i.e.*, that of assisting the conference leader in knowing what to expect as discussion develops. Many men who have successfully conducted conferences have testified that such compilations have been of considerable value to them in carrying on the work.

PROMOTIONAL FOREMANSHIP TRAINING

As the term is used here, promotional foremanship training means training designed to equip a foreman for a higher job in the organization. This is an entirely legitimate and desirable form of training. It differs, however, in a marked way from the trade extension foremanship previously discussed.

In the first place, whereas the trade extension foremanship training can be based almost entirely on the experience of men already experienced in foremanship, this type of training must deal very largely with experiences which the members of the group have not experienced as responsible officers. They have, in most cases, had experience in working under such officers.

To use an analogy, in the first place we have a horizontal view, and in the second place, a view looking up from below. This means, of course, that much of what is given must be handled as material new to the men or at least as material and experiences viewed from a slant lying outside of personal experience on the job. This greatly increases the necessity for the use of instructional methods and devices. It correspondingly reduces the opportunity for the use of conference methods.

It is also evident that much of the content of training courses of this character must lie outside of the direct responsibilities and problems of foremen taking the course. Since the conference method is of value in proportion as the men have experiences and direct responsibilities on which to confer, the opportunities for the use of the conference method are greatly reduced and the necessity for using devices and instructional methods is greatly increased.

So far as the writer is aware, considering the field as a whole, but little attempt has been made to differentiate between promotional training and job extension training, except where the conference method has been used. As already pointed out, at least up to the present time, conference methods have been used almost exclusively on the trade extension basis.

Obviously, where equipment for promotion is the objective, such work should be undertaken only with men who have an opportunity to be promoted. This means a selected group.

A promotional course given to everyone who wanted to take it is of doubtful value. In the first place, the group will include many men who are not qualified by personality or mentality to be in line for promotion. In the second place, where men of this type have taken such a course, it is liable to promote dissatisfaction when, having done the work, they are not given consideration as promotional opportunities occur. In the third place, difficulties with

regard to the study of text, the education required, and the use of home study, already referred to, apply even more strongly here than in the case of 'straight' foreman extension training.

Some few experiments have been carried on along these lines, one of which fell under the direct observation of the writer. In this case men who were known to be in line for promotion were brought together, thus forming a selected group. This group was given a training course of a promotional character.

This experiment was too limited to warrant the drawing of any general conclusions. So far as it went, however, it indicated that the experience of men in working under supervisors gave them a considerable apperceptive base for the work of a directly instructional character.

The chief use that could be made of the experiences obtained seemed to be in bringing out the difference between the 'slant' of the superior and that of the subordinate in considering the same problem. It also brought out the fact that such a training course should be based on an analysis of the duties of the superior, rather than that of the men in training.

As pointed out above, such an analysis is of value to the instructor in charge of the work, rather than to the men in the training group. However, in this case, partial analyses of the responsibilities of superiors were successfully worked out with the group and seemed to be of service.

TRAINING FOR FOREMANSHIP

A third phase of this work, to which but little attention has been given, has been the training of workers for the lower foremanship jobs, or the training of perfectly green men and women for these same jobs.

During the war a considerable amount of training of this character was carried on. Since that time but little work has apparently been undertaken, for the obvious reason that in the ordinary routine of promotion, the desirability of such training has been questioned until an individual was actually employed in a subordinate supervisory capacity.

It appears, then, that the development of foremanship training has shown clearly the possibility of at least three kinds of training: first, job extension training; second, promotional training for those already employed, in a supervisory capacity; third, the training of workers for subordinate supervisory jobs. Of these, the first has been the field in which most of the experimental work has been done, and the first and second have been considerably mixed in many types of training work.

GENERAL TRAINING WORK

In addition to mixing training courses or conferences there have been carried on quite a number of experiments of a more general character. These have usually consisted of a series of lectures or talks, either of a continuous or discontinuous character.

According to those who have been developing this type of somewhat general training, results have been satisfactory where the objective has been to promote good morale and *esprit de corps*. They have also found it valuable in acquainting foremen in charge of one department with the interrelations among departments.

GENERAL SUMMARY

The study of what may be called the intrinsic efficiency of the various training plans and a determination under which each plan is qualified to function most effectively is urgently needed at this time. It would afford an excellent opportunity for a piece of research work by someone interested and qualified to undertake it. A considerable discussion of the different types of foreman training is given in Bulletin 62 of the Federal Board for Vocational Education, and might well be read as supplementary to this chapter.

We may fairly say that experience up to date has indicated that every device that has been developed has been of value in certain conditions, and that none of them has functioned in a satisfactory manner where the conditions were not right.

There is still a certain amount of confusion between two distinct kinds of foremanship training: the improvement of foremen on the job as against training for promotion. And we even have a

third possibility of training for foremanship persons not employed as foremen. The whole character of the training is fundamentally affected by this question. Most of the work with which we have been connected has aimed at improvement on the job, rather than training for a higher job. Many of the textbook courses which have been developed have aimed at training for promotion. Both of these are entirely legitimate and proper, but it is a mistake in our opinion to offer promotional training where the objective is to secure greater efficiency on the job, just as it would be a mistake to offer training for greater efficiency on the job when the objective was to train for a higher job.

All these matters at present are in a condition of flux. The important point is that we are not recognizing as one important part of our vocational training program the training of the minor executive. Out of all the experimentation will come the promotion of better foremanship which is a very necessary and vital part of our industrial training program.

CHAPTER X

TRAINING OF TEACHERS FOR VOCATIONAL INDUSTRIAL SCHOOLS: SOME FUTURE PROSPECTS

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THE SITUATION

There is as yet no *system* of vocational industrial schools in the United States. Here and there are found experimental all-day schools, touching, as it were, the fringes of this great field of work. A bare half-dozen of these are dealing with trades entered by girls and women. A score or more are giving partial vocational training to prospective machinists, carpenters, electricians, printers, automobile repair men, sheet metal workers, and the like. So far as the present writer is aware, no one of these incipient trade schools has yet reached the point where its training can be substituted in lieu of a complete apprenticeship training, if that has been standardized for the vocation. The best that has been accomplished is to have a year or two years on apprenticeship allowed for two or more years of training in the industrial school.

In those industrial vocations in which organized apprenticeship has not existed, the situation is even less clear. Pupils can leave machine-shop schools at almost any time and find profitable employment as machine-shop operative specialists. Girls, more or less completely trained in power operating, novelty work in pasting trades, or even dressmaking, can readily find employment, not because the employer recognizes them as fully trained hands, but because he is constantly taking on novices, and these, owing to their partial training, are somewhat more promising than would be novices with no training at all.

In the evening schools and schools of extension industrial education, traditions of aim and method are somewhat better estab-

lished, but here, as is well known to all educators, so large a proportion of the teachers must themselves be on a part-time basis that problems of teacher-training assume a wholly different character from those encountered in providing full-time, day-school teachers.

Any survey of future prospects of teacher training for industrial school work must emphasize the enormous and baffling complexities of the field under consideration. We have only touched the fringes of the vast possible areas of vocational training for the industrial vocations. It must be remembered that these include not merely the building trades, printing, and a few other handicraft trades, to which we have become somewhat accustomed, but also the enormous range of factory operations, a wide variety of transportation vocations, many kinds of mining vocations, seamanship, and a host of others. For most of these we have now not only no experimental vocational schools, but to a large extent, educators are not even yet dreaming of seeing such schools provided, to say nothing of helping towards their provision. Educators have come to look with complete complacency upon the expenditure of many millions of dollars for the training of clerical and stenographic workers, for education in home economics, and for instruction in agriculture. They have rarely, as yet, faced either the problems of need, or the problems of procedure, in substituting school vocational education for the industries for the pick-up and largely chaotic method that now prevails.

Hence it is necessary to recognize at the outset of any discussion of the problem of training vocational school teachers that, though there are many hundreds of distinct industrial vocations, basic (or all-day) vocational schools have been proposed for hardly a score of them, and extension schools for less than one hundred.

PRESENT BEGINNINGS OF TEACHER TRAINING

The situation to date in the field of teacher training for the industrial vocations is one of beginnings, expediencies, and improvisations. Where any school of basic vocational education (that is, presupposing no previous acquisition of skills) intends to do an honest and straightforward job for a trade or other pursuit, it invariably finds it necessary to take most of its teachers from the

ranks of skilled workers in that field. Evening industrial schools, since they must necessarily confine themselves so largely to the giving of technical instruction, have found it practicable largely to rely upon those trained in academic branches, even when without specific vocational qualifications for the occupation in which extension instruction is being given. Not a few full-time day schools have contented themselves with processes of technical instruction fortified by moderate amounts of laboratory or other exercise work. These have drawn to some extent upon teachers of manual training, and to a large extent upon fairly competent teachers of such technical branches as 'shop drawing,' shop mathematics, electricity, and mechanics.

The graduates of certain institutions devoted to preparing manual training or industrial arts teachers have found it practicable to become, with some additional preparation, successful industrial school teachers in carpentry, machine shop practice, printing, and probably a few other handicraft trade lines.

It is now clear that some vocations can be best taught by giving to one teacher entire responsibility for all phases of training; whilst others can only practicably be taught by subdivision of labor amongst teachers. It is not conceivable that the vocations of medicine, elementary-school teaching, or electrical engineering could be taught all by one person, however highly proficient in the practice of the vocation itself he might be. On the other hand, there now seems little justification for believing that various forms of highly specialized industrial education, comptometer operation, or salesmanship need have their teaching distributed among two or more teachers.

With regard to many other vocations the matter is still in doubt. Shall the training of the prospective home-maker be divided between at least two teachers, one responsible for cooking and its allied lines, and another responsible for sewing and its allied lines? Or is it best that one teacher should be trained to take all phases of an ordinary home-making program and teach it?

The same problem applies in agricultural education. Is it best that one teacher should teach to a group of boys in a basic home

project school all that they need to have of specific practical training as well as related technical and social knowledge?

The present writer is convinced that all present tendencies in agricultural and home-making education point towards the placing in the hands of one person all forms of vocational training of novices over a stated period. This is made necessary to a large extent for the farm callings by the necessary dispersion and small size of schools for the training of prospective farmers. It would appear also to be a necessity in all rural and village schools expecting to offer vocational home-making.

In city schools it is hard as yet to determine what we shall eventually prefer, since to such a large extent the home economics courses in these schools still devote themselves almost wholly to instruction in technical knowledge, greatly subordinating the attainment of practical skills and actual practice in home-making.

PROBLEMS FOR THE NEAR FUTURE

It is now clear that any programs for the training of teachers for industrial schools must themselves conform to the standards of sound vocational education. They must proceed from foundations of job analysis, through determination of the potential abilities of those available for training to specific programs for the acquisition of practical skills, or related technical knowledge, and of related 'social' or 'general' knowledge.

Theoretically, it might seem that a well-planned program for the training of teachers for one vocation should indicate appropriate programs for the training of teachers for their vocations. It is doubtful at present how far this may be the case, because of wide disparities among different vocations, not only as between industrial and other fields, but within the industrial vocations themselves.

We are only in the beginning stages of job analysis as applied to the handicraft trades. We possess hardly any tested technique as yet for job analysis of factory operative specialties, of most repair trades, of the transport vocations, or of mining.

But methods and standards for job analyses are rapidly being improved. Applications of these in the study of any particular

vocation may be expected to reveal first of all the qualitative strands, or units, entering into the composition of the total efficiency found in the practitioner of the vocation. These strands, or units, may then separately be considered as consisting of specific skills, managerial abilities, or other units that can be produced only by much repetition in direct training. Other strands will be found to consist largely of related skills or of related technical knowledge that may be imparted by methods fairly well known under the pedagogy of instruction. Still other strands, or units, will consist of the appreciations, the ideals, the social insights, the health knowledge that complement vocational skills and technical knowledge in rounding out the fully socialized worker in any particular field.

Far more difficult, but nevertheless practicable, is the quantitative evaluation of these several strands in terms of their relative importance or in terms of the varieties of training, instruction, or other form of education requisite to produce them.

Job analyses of certain industrial vocations for which school vocational education is now planned, reveal certain problems as respects which sharp differentiations must exist between training for these vocations and training for the professions, for agriculture, and for home-making.

In a large proportion of the industrial vocations, requirements for skill bulk relatively large as against requirements for related technical knowledge. Where the industrial vocation is a highly subdivided part of the social processes involved in the production and marketing of a given commodity, the related social education ought clearly to be a prominent part of the total process, as contrasted with that necessary as a separate thing in many forms of commercial, agricultural, and home-making education.

In other words, it becomes more and more clear that in these vocations the total processes of training any industrial workers to optimal proficiency require that one teacher for any group of pupils shall be responsible, not merely for training in skills, but also for instruction in related technical knowledge. Under these circumstances there can probably be no differentiation of the responsibility for the total processes of vocational training corresponding to the differentiations now found so largely in professional schools,

as well as frequently in schools of agricultural and home-making education.

In medicine or engineering, for example, it seems, as stated above, entirely practical to have the technical subject of chemistry for either of these vocations taught by a person who is not himself a trained physician or engineer. In agricultural education it is frequently the case that technical courses in farm accounting and animal husbandry are offered by persons who would make no pretense to being themselves either trained farmers or competent to enter upon farming. In home-making it not infrequently happens that one teacher gives instruction and laboratory practice in cooking and another in sewing, neither of them being a competent practitioner outside of her own field.

It seems highly probable that this problem will have to be solved differently according to different fields of industrial work. Heretofore, in trade training it has been uncommon for the teacher of shop practice to be responsible also for the related technical studies, and still less for those largely undeveloped, but nevertheless very important, adjuncts probably to be called the related social studies.

This has been due very largely to the fact that teachers employed from the industries, while they might do sufficiently well in directing practice of students, usually possess little or no ability to instruct in the more abstract subjects. It has also been due largely to the fact that the related studies paralleling any particular trade have been very ill-defined. Two consequences have followed. In the first place, each individual teacher teaching related studies to a class of boys endeavoring to learn carpentry, for example, has had to draw from miscellaneous sources for the problems of mathematics, drawing, mechanics, English, and the rest which it seemed expedient to teach. In the second place, almost no textbooks have been available bearing upon such specific subjects as carpenters' mathematics, automobile repair men's mechanics, machinists' drawing, and the like.

This condition has also permitted the construction of a large variety of books and manuals under such titles as "shop mathematics," "shop sciences," "practical drawing," and the like. To abstract from the vast amounts of chaff thus gathered the grains

of wheat necessary to a particular vocation has proved a problem too great for a shop teacher.

One of the most serious remaining problems of industrial education, and one which has as yet received almost no adequate consideration, relates to the 'period of functioning' for which the training should be designed. For example, we have a student in a basic industrial school 16 years of age. Are we to think of his prospective proficiencies in his occupation over a period of thirty or more years, or should we concern ourselves primarily with his expected proficiency during the first five years subsequent to this training?

This problem is very closely connected with the problem of diagnosing the shiftings, upgradings, and other changes that take place in all fields where highly subdivided production prevails. It is highly probable that the large majority of industrial workers shift at least three times in their industrial careers, first from juvenile to young manhood vocations, and then to vocations suitable to their mature years and experience.

To some extent these transitions are aided by instruction and training procured in evening and other extension schools. The entire process is, in the main, haphazard, wasteful of economic resources, and destructive of morale.

To the present writer it seems very probable that industrial education will eventually be so shifted that short intensive full-time courses will prepare young people for entrance into juvenile vocations from which, after a period of a few years, they will seek advancement to young manhood vocations. For these latter, intensive, basic, full-time training will be fully as urgent and practicable as for the earlier juvenile vocations. In the same way men of twenty-five or upward, seeking advancement to foremanship or more skilled specialties, will again seek full-time vocational schools for periods of from 12 weeks upward for the purpose of specific, upgrading vocational training.

Under these conditions it would be of utmost importance that every basic vocational school should see its major objectives in terms of the productive usefulness of its trainees during the first five years or thereabouts after their emergence from their period

of training. Under these conditions, too, industrial school teachers, should be trained to give much more specific and directly 'functioning' vocational training than is usually contemplated at present.

Another problem as to which very little is yet known is that of pedagogic standards in the various fields of industrial teaching. For example, in many places it may prove a relatively simple matter for a trained manual worker to train others in habits or skills appropriate to the vocation. For thousands of years, certainly, journeymen have thus trained apprentices without having given special time and pedagogic preparation to this work. It can readily be assumed that apprentice training is often slow and poor because of the pedagogic ignorance of the trainer. Discovery of this fact, however, does not indicate to us how much of pedagogic training of workers might give optimal results toward enabling them in turn to train small groups of learners in the skills and other habits essential to the trade or other industry in question.

Similarly, it may prove, on further inquiry, that while the teaching of technical knowledge appropriate to any given vocation is a simple matter so long as no intimate correlation or integration of the technical knowledge and skills is involved, that such teaching does become a difficult and series matter as soon as close integration or correlation is expected.

For example, it may be comparatively easy for a well-prepared academic teacher to give instruction in courses in carpenters' mathematics, steel industry history, or teachers' psychology, so long as the logical organization of this abstract subject matter constitutes the only needed progress and standards of attainment sought. It is probably true that no industrial school has succeeded in closely integrating this instruction in technical knowledge with the practical skills of its learners. The same criticism might well be made with regard to schools of medicine, normal schools, military training school, and agricultural colleges. In none of these do you find as yet any very purposive correlation of technical knowledge with shop or school practice. In this case, however, the deficiency is probably of far less serious import than it would be in industrial schools. All available evidence seems to point to the conclusion that gifted minds, that is, those that attain to high standards when

measured by intelligence tests, are able to assimilate relatively large stores of technical knowledge as logically presented, and to draw therefrom in practical emergencies later as need arises. On the other hand, there is every probability that minds of average or less than average intelligence are only slightly able to do this. They need to acquire technical knowledge in close union with their practical powers of achievement if the two are to combine in the higher forms of vocational competency.

CONCLUSIONS TENTATIVE FINDINGS AND IDEALS

It is submitted that experience to date in the analysis of the possibilities of vocational education, in job analyses of the various vocations, and in experimental work with programs for the training of teachers, justifies the following conclusions:

1. It is possible now to differentiate various vocations for which it is practicable for schools of appropriate types to give training in whole or in part. Further surveys will undoubtedly result in clearer differentiations of these specific vocations and will indicate the approximate numbers practicing them in any given community and the possibilities of supplementing apprenticeship and pick-up training by specialized vocational school training.

2. In such fields as agriculture, the commercial callings, and the like, steady progress is being made in defining, for purposes of vocational education, vocations actually practiced, thus enabling educators to escape from the indeterminateness of such terms as "commercial education," "agricultural education," and the like. Within the commercial world it is now clear that the vocation of stenographer-typist constitutes a very large, important, and fairly well defined field for vocational training. Certain other clerical callings, both junior and senior in scope, are being brought into relief. The general field of salesmanship has not yet been clearly broken up into its constituent distinctive vocations, but there is every prospect that that will be done at an early date.

3. The agricultural callings are made distinctive to some extent by specialization of function, and to some extent by regional con-

ditions. Thus, in current practice, can be distinguished the poultry farmer, the dairy farmer, the market gardener, the orchardist, and the like. Increasingly we are able to distinguish likewise the general farmer of the Iowa type, the general farmer of the uplands of Pennsylvania type, the cotton grower, and the like. In proportion as much of this is differentiated and defined, it will become possible to give explicit statement to the varieties and degrees of specific vocational training here profitable for each.

4. Home economics, usually treated as a unified field of technical instruction, may be expected presently, on the vocational home-making side, to differentiate into several types of more or less well-defined home-making vocations each requiring its appropriate standards of training.

5. The building trades, job printing, and a few other industrial vocations using relatively little power-driven machinery are probably now more clearly defined from the standpoint of possibilities of specific vocational training than are the almost numberless vocations found where power-driven machinery has entailed extensive and increasing subdivision of process and specialization of work.

Within a few years it should prove practicable to devise a total program for teacher training for at least a number of the trades and other industrial vocations for which school vocational training in whole or in part should prove expedient and necessary.

Such a program should almost certainly include the following elements:

a. Enrolling in the training school at 18 years, the prospective teacher should be allocated to wage-earning participation in his trade on some part-time basis whereby he could give sufficiently prolonged periods, perhaps 8, 12, or 16 weeks, to wage earning work, after which he would return to the school for a period of perhaps half as long for intensive study of the related technical knowledge subjects and related social knowledge subjects of the vocation in question. During this time, too, he could be directed in a moderate amount of reading of a pedagogical nature designed to be preliminary to his later pedagogic study.

b. After four years of this practical training and productive work, the prospective teacher should then turn his attention ex-

clusively to pedagogic preparation. He should take the usual studies basic to the training of teachers, emphasis always being placed upon the peculiar character of the teacher vocation into which he is expected to go.

c. During the last, or sixth, year he should divide his time between further pedagogic studies and supervising practice teaching in successful industrial schools.

The net outcome of this training process should be a teacher adequately prepared to enter not only all ordinary teaching, but also any necessary related technical instruction and instruction in related subjects.

CHAPTER XI

LIST OF PUBLICATIONS FOUND HELPFUL IN TEACHER TRAINING COURSES IN INDUSTRIAL EDUCATION

Compiled by

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This bibliography contains only references which were supplied by teacher trainers in industrial education throughout the United States, in response to a questionnaire sent out in October, 1923, which solicited a list of books "found of special merit" that "were being used in the various teacher-training institutions in connection with the different courses."

The Roman numerals in parentheses indicate the field in which the books have been found helpful. These fields are as follows:

- I. Philosophy and background (social and economic) of vocational education
- II. History and development of industrial education
- III. Organization and administration of industrial education
- IV. Psychology and methods in industrial education
- V. Types of industrial education: day, part-time, evening classes
- VI. Employment, personnel, and plant training
- VII. Bibliographies of industrial education
- VIII. Miscellaneous

The Federal Board does not assume the responsibility of presenting this as the best that might be done in regard to a bibliography, but has merely brought together the replies made by about 25 percent of the 250 teacher trainers to whom the request for references was sent. Owing to a lack of time, no effort was made to follow up the original requests in order to get a larger return.¹

¹ In this list as submitted by the Industrial Education Service there were a number of references followed by question marks to indicate that they could not be found by the compiler either in the *Reader's Guide* or in any other reference books at his disposal. The editor has taken the responsibility of eliminating these books from the list. Beyond making a few corrections in titles with which he was familiar, the editor has made no further attempt to revise the list or verify the bibliography.—G.M.W.

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167. PALMER, GEORGE HERBERT. *Ideal teacher.* (Riverside educational monographs.) Houghton. 1910. (IV)
168. PARK, CLYDE WILLIAM. *The co-operative system of education.* (Bulletin 1916, No. 37, U. S. Bureau of Education) Superintendent of Documents. 1916.
169. PARKER, CARLETON HUBBELL. *Casual laborer and other essays, with introduction by Cornelia S. Parker.* Harcourt. 1920. (IV)
170. PARKER, SAMUEL CHESTER. *Methods of teaching in high schools.* Ginn. 1915. (IV)
171. POLK, RALPH W. *Vocational printing.* G. M. Jones Co. 1918. (VIII)
172. POUND, ARTHUR. *Iron man in industry.* Atlantic Monthly. 1922. (IV)
173. PRICE, GEORGE MOSES. *Modern factory: safety, sanitation, and welfare.* Wiley. 1914. (VI)
174. PROCTOR, ARTHUR W. *Principles of public personnel administration.* (Institute for Government research. *Prin. of administration.*) Johns Hopkins. 1921. (VI)
175. REED, ANNA Y. *Junior wage earners.* Macmillan. 1920. (I)
176. RICHMOND, MARY ELLEN. *Social diagnosis.* Russell Sage Foundation. 1917.
177. ROBINSON, EMILY. *Vocational education.* (Handbook series.) Revised and edited by Julia E. Johnsen. Wilson, H. W. 1921. (I)
178. RODGERS, ROBERT HENRY, AND FURNEY, O. *Industrial subjects in a part-time or continuation school.* C. F. Williams. 1922. (III)
179. RODGERS, ROBERT HENRY, AND FURNEY, O. *Unit instruction sheets and individual instruction in vocational classes.* C. F. Williams. 1922. (III)
180. ROUNTREE, BENJAMIN SEEBOHM. *Human factor in business.* Longmans. 1921. (VI)
181. RUDOLPH, J. D. *Three hundred hour course in printing.* Rudolph.
182. RUEDIGER, WILLIAM CARL. *Principles of education.* Houghton. 1910. (I)
183. RYAN, J. T. *Instructional elements.* Kentucky State Board. 1922. (V)
184. SADLER, MICHAEL E. *Continuation schools in England and elsewhere.* Univ. of Manchester Press. 1908.
185. SCHNEIDER, HERMAN. *Education for industrial workers: a constructive study applied to New York City.* (School efficiency series.) World Book Co. 1915. (V)
186. SCOTT, WALTER DILL, AND HAYES, M. H. S. *Science and common sense in working with men.* Ronald. 1921. (VI)
187. SELVIDGE, ROBERT WASHINGTON. *How to teach a trade.* Manual Arts Press. 1923. (IV)
188. SEYBOLT, ROBERT FRANCIS. *Apprenticeship and apprenticeship education in colonial New England and New York.* (Contributions to education, No. 85) Teachers College. 1917. (II)

189. SHADWELL, ARTHUR. *Industrial efficiency: comparative study of industrial life in England, Germany, and America.* Longmans. 1909. (I)
190. SMITH, HARRY BRADLEY. *Establishing industrial schools; with an introduction by C. A. Prosser.* (Riverside educational monographs.) Houghton. 1916. (III)
191. SMITH, HARRY BRADLEY. *Industrial history.* Macmillan. 1923. (II)
192. SMITH, HARRY BRADLEY. *Report on the industrial schools of Hamburg and Altona, with references by Harburg and Blankenese.* (Educational Dept. Bul., No. 491) New York State University. 1911.
193. SNEDDEN, DAVID SAMUEL. *Educational sociology.* (Century social science series.) Century. 1922. (I)
194. SNEDDEN, DAVID SAMUEL. *Problem of vocational education.* (Riverside educational monographs.) Houghton. 1910. (I)
195. SNEDDEN, DAVID SAMUEL. *Sociological determination of objectives in education.* Lippincott. 1921. (I)
196. SNEDDEN, DAVID SAMUEL. *Vocational education.* (Brief course series in education.) Macmillan. 1920. (I)
197. SNEDDEN, DAVID SAMUEL. *Vocational education: its theory, administration, and practice.* Houghton. 1915.
198. SPENCER, HERBERT. *Education.* (Lotus series.) Caldwell. 1912. (I)
199. STRAYER, GEORGE DRAYTON. *Brief course in the teaching process.* Macmillan. 1911. (VI)
200. STRAYER, GEORGE DRAYTON, AND NORSWORTHY, NAOMI. *How to teach.* Macmillan. 1917. (IV, VI)
201. SWIFT, EDGAR JAMES. *Psychology and the day's work: a study in the application of psychology to daily life.* Scribner. 1918. (IV)
202. TADD, JAMES LIBERTY. *New methods in education.* Judd.
203. TAYLOR, FREDERICK WINSLOW. *Shop management; with an introduction by R. R. Towne.* Harper. 1911. (VI)
204. TAYLOR, JOSEPH SCHIMMEL. *Handbook of vocational education.* Macmillan. 1914. (II)
205. TEACHERS COLLEGE, COLUMBIA UNIVERSITY. *List of books relating to industrial arts and industrial education.* (Technical education Bulletin, No. 6.) Teachers College. 1911.
206. TEAD, ORDWAY, AND METCALF, HENRY CLAYTON. *Personnel administration: its principles and practice.* McGraw. 1920.
207. TERMAN, LEWIS MADISON. *Measurement of intelligence.* Houghton. 1916.
208. THOMPSON, ELIZA BAILEY. *Cotton and linen.* (Merchandise Manual Series.) Ronald. 1922.
209. THOMPSON, ELIZA BAILEY. *Silk.* (Merchandise Manual Series.) Ronald. 1922.
210. THORNDIKE, EDWARD LEE. *Education, a first book.* Macmillan. 1912. (I)
211. TOLMAN, WILLIAM HOWE. *Social engineering.* McGraw. 1909. (VI)

212. Trade foundations based on producing industries: a prevocational textbook, by pre-vocational and vocational directors, instructors and tradesmen; with preface by T. N. Carver. Jones. 1919.
213. TUFTS, JAMES HAYDEN. Real business of living. Holt. 1918. (I)
214. U. S. BUREAU OF EDUCATION. Vocational education. (Library leaflet 1919, No. 7.) Superintendent of Documents. 1919.
215. U. S. FEDERAL BOARD FOR VOCATIONAL EDUCATION. Annual reports.
216. U. S. FEDERAL BOARD FOR VOCATIONAL EDUCATION. Bulletins:
 - No. 1—Statement of policies.
 - No. 17—Trade and industrial education: organization and administration.
 - No. 18—Evening industrial schools.
 - No. 19—Part-time trade and industrial education.
 - No. 20—Buildings and equipment for schools and classes in trade and industrial education.
 - No. 30—Evening and part-time schools in the textile industry of the Southern States.
 - No. 36—Foreman training courses (Parts I and II).
 - No. 43—The labor audit.
 - No. 44—The wage setting process.
 - No. 45—Job specifications.
 - No. 46—The turnover of labor.
 - No. 47—Industrial accidents and their prevention.
 - No. 48—Employment management and industrial training.
 - No. 49—The selection and placement of employees.
 - No. 50—Employment management: its rise and scope.
 - No. 51—Bibliography of employment management.
 - No. 52—Theory and practice. Outlines of instruction in related subjects for the machinist's trade, including general trade subjects for certain occupations.
 - No. 58—Trade and industrial education for girls and women.
 - No. 60—Foremanship courses vs. instructor training courses.
 - No. 61—Improving foremanship.
 - No. 62—Instructor training.
 - No. 67—Survey and analysis of the pottery industry.
 - No. 69—Analysis of the railway boilermaker's trade.
 - No. 73—Part-time schools. A survey of experience in the United States and foreign countries. (Superintendent of Documents, 35 cents.)
 - No. 78—Part-time co-operative courses. (Superintendent of Documents, 5 cents.)
 - No. 85—Program for training part-time school teachers. (Superintendent of Documents, 5 cents.)
 - No. 87—Apprentice education. (Superintendent of Documents, 55 cents.)
217. UNIVERSITY OF CALIFORNIA. Syllabus of an introductory course on part-time education. 1920.

218. UNIVERSITY OF CALIFORNIA. Part-time and continuation schools abroad. 1921.
219. UNIVERSITY OF ILLINOIS. Reference list for teacher-training classes in general continuation schools.
220. UNIVERSITY OF THE STATE OF NEW YORK. A selected list of books, pamphlets, and magazine articles on part-time education. No. 746. November, 1921.
221. UNIVERSITY OF THE STATE OF NEW YORK. A list of helpful publications concerning vocational instruction. No. 600. October, 1915.
222. UNIVERSITY OF PITTSBURGH. Bibliography on part-time education.
223. VAN KLEEK, MARY. Working girls in evening schools. (Russell Sage Foundation pub.) Survey associates. 1914. (V)
224. WEBB, SIDNEY. Works manager today: an address. Longmans. 1917. (VI)
225. WEBB, SIDNEY, AND WEBB, BEATRICE. Industrial democracy. Longmans. 1920. (VI)
226. WEEKS, RUTH MARY. People's school, a study in vocational training. (Riverside educational monographs.) Houghton. 1912. (I)
227. WEEKS, RUTH MARY. Socializing the three R's. Macmillan. 1919. (I)
228. WELPTON, WILLIAM P. Primary artisan education. Longmans. 1913. (IV)
229. WINSLOW, LEON LOYAL. Elementary industrial arts. Illustrated by H. W. Jacobs. Macmillan. 1922.
230. WRAY, W. J., AND FERGUSON, R. W. (editors). Day continuation school at work; papers by twelve contributors. Longmans. 1920. (V)
231. WRIGHT, CARROLL DAVIDSON. The apprenticeship system in its relation to industrial education. (Bulletin 1908, No. 6, Whole No. 389, U. S. Bureau of Education) Superintendent of documents. 1908.
232. WRIGHT, CARROLL DAVIDSON. Industrial evolution of the United States. Scribner. (I)
233. Y. M. C. A. UNITED Y. M. C. A. SCHOOLS. Foremanship; the standard course of the United Y. M. C. A. Schools. Four books. Associated Press. 1921.

MISCELLANEOUS:

- Educational administration and supervision. Vol. IX, No. 5. May, 1923.
Published by Warlick & York, Inc. Baltimore, Md.
- Bulletins of the National Society for Vocational Education.
- Vocational Education Magazine.
- Bulletins of National Association of Corporation Training.
- Catalogues from publishing houses.
- Industrial Arts Magazine.
- Industrial Education Magazine.
- Index of occupations, U. S. Census Bureau.

CONSTITUTION OF THE NATIONAL SOCIETY FOR THE STUDY OF EDUCATION

ARTICLE I

Name.—The name of this Society shall be “The National Society for the Study of Education.”

ARTICLE II

Object.—Its purposes are to carry on the investigation and to promote the discussion of educational problems.

ARTICLE III

Membership.—SECTION 1. There shall be three classes of members—active, associate, and honorary.

SEC. 2. Any person who is desirous of promoting the purposes of this Society is eligible to active membership and shall become a member on approval of the Executive Committee.

SEC. 3. Active members shall be entitled to hold office, to vote, and to participate in discussion.

SEC. 4. Associate members shall receive the publications of the Society and may attend its meetings, but shall not be entitled to hold office, or to vote or to take part in the discussion.

SEC. 5. Honorary members shall be entitled to all the privileges of active members, with the exception of voting and holding office, and shall be exempt from the payment of dues.

A person may be elected to honorary membership by vote of the Society on nomination by the Executive Committee.

SEC. 6. The names of the active and honorary members shall be printed in the *Yearbook*.

SEC. 7. The annual dues for active members shall be \$2.00 and for associate members \$1.00. The election fee for active and for associate members shall be \$1.00.

ARTICLE IV

Officers and Committees.—SECTION 1. The officers of this Society shall be a president, a vice-president, a secretary-treasurer, an executive committee, and a board of trustees.

SEC. 2. The Executive Committee shall consist of the president and four other members of the Society.

SEC. 3. The president and vice-president shall serve for a term of one year, the secretary-treasurer for a term of three years. The other members of the Executive Committee shall serve for four years, one to be elected by the Society each year.

SEC. 4. The Executive Committee shall have general charge of the work of the Society, shall appoint the secretary-treasurer, and may, at its discretion, appoint an editor of the *Yearbook*.

SEC. 5. A board of trustees consisting of three members shall be elected by the Society for a term of three years, one to be elected each year.

The Board of Trustees shall be the custodian of the property of the Society, shall have power to make contracts, and shall audit all accounts of the Society, and make an annual financial report.

SEC. 6. The method of electing officers shall be determined by the Society.

ARTICLE V

Publications.—The Society shall publish *The Yearbook of the National Society for the Study of Education* and such supplements as the Executive Committee may provide for.

ARTICLE VI

Meetings.—The Society shall hold its annual meetings at the time and place of the Department of Superintendence of the National Education Association. Other meetings may be held when authorized by the Society or by the Executive Committee.

ARTICLE VII

Amendments.—This constitution may be amended at any annual meeting by a vote of two-thirds of voting members present.

MINUTES OF THE CLEVELAND MEETING OF THE
NATIONAL SOCIETY FOR THE STUDY OF
EDUCATION, FEBRUARY 24-27, 1923

The first session of the Society, held in the Ball Room of the Hotel Cleveland, Saturday evening, February 24, was called to order at 8 o'clock by President Ernest Horn, who introduced Vice-President Agnes Rogers as presiding officer for the evening. The program was carried out as follows:

THE YEARBOOK ON ENGLISH COMPOSITION

Earl Hudelson, Professor of Education, University of West Virginia.

AIMS IN ENGLISH COMPOSITION

James F. Hosic, Associate Professor of Education, Teachers College, Columbia University, New York.

METHODS OF TEACHING ENGLISH COMPOSITION

Matthew H. Willing, Principal of Springfield High School, Springfield, Illinois.

THE MEASUREMENT OF ENGLISH COMPOSITION

Frank W. Ballou, Superintendent of Schools, Washington, D. C.

THE UNRELIABILITY OF THE MEASUREMENT OF ABILITY IN WRITTEN COMPOSITION

Walter S. Monroe, Director of Bureau of Educational Research, University of Illinois, Urbana, Illinois.

MEASUREMENTS OF ENGLISH COMPOSITION

Stuart A. Courtis, Director of Instruction, Teacher Training, and Research, Public Schools, Detroit, Michigan.

Discussion

Ervin E. Lewis, Superintendent of Schools, Rockford, Illinois.

The Secretary briefly explained the purpose and organization of the Society and called attention to the report of progress of the Society's Committee on the preparation of a *Yearbook* on "The Education of Gifted Children."

At the business meeting that followed, the only important item was the election of officers for the ensuing year. The report of the Nominating Committee presented by Supt. Ballou was adopted unanimously as follows:

For President, Charles H. Judd, School of Education, University of Chicago, Chicago, Illinois; for Vice-President, Lida B. Earhart, Teachers College, University of Nebraska, Lincoln, Nebraska; for Secretary-Treasurer, Guy M. Whipple, School of Education,

University of Michigan, Ann Arbor, Michigan; for member of the Executive Committee to serve for four years, Stuart A. Courtis, Director of Instruction, Teacher Training, and Research, Public Schools, Detroit, Michigan; for member of the Board of Trustees, to serve for three years, Harold O. Rugg, The Lincoln School of Teachers College, Columbia University, New York City.

The second session, held Tuesday evening, February 27, at 8:30 o'clock, brought out an audience which filled the Ball Room to overflowing. About 1200 persons listened to what was generally regarded as one of the best programs ever given by the Society, and several hundred were unable to gain entrance.

Supt. Carleton W. Washburne of Winnetka, Illinois, who was to have spoken on "Curriculum Making and the Social Studies" arrived from Europe too late to reach Cleveland. Otherwise the following program was carried out as contemplated:

INTRODUCING THE YEARBOOK ON SOCIAL STUDIES

Ernest Horn, President of the Society.

METHODS OF SECURING SOCIAL SCIENCE MATERIAL FOR THE SCHOOLS

Charles H. Judd, Director of the School of Education, University of Chicago, Chicago, Illinois.

A COLLEGIATE SURVEY COURSE IN THE SOCIAL SCIENCES

John J. Coss, Associate Professor of Philosophy, Columbia University, New York.

SOCIAL SCIENCE AND THE A.Q. IN DEMOCRACY

Harold O. Rugg, The Lincoln School of Teachers College, Columbia University, New York.

THE CONTRIBUTION OF THE YEARBOOK TOWARD CURRICULUM-MAKING

Frank M. McMurry, Professor of Elementary Education, Teachers College, Columbia University, New York.

Discussion

Calvin O. Davis, Professor of Secondary Education, University of Michigan, Ann Arbor, Michigan.

William C. Bagley, Professor of Education, Teachers College, Columbia University, New York.

In addition to the formal discussion, remarks were made by Professor Charles McMurry and the evening was closed by a summary and rejoinder on the part of Dr. Rugg.

GUY M. WHIPPLE,
Secretary-Treasurer.

**FINANCIAL REPORT OF THE SECRETARY-TREASURER OF THE
NATIONAL SOCIETY FOR THE STUDY OF EDUCATION
JANUARY 1, 1923, TO DECEMBER 31, 1923, INC.**

RECEIPTS FOR 1923

Balance on hand, January 1, 1923.....	\$ 10,637.41
From sale of <i>Yearbooks</i> by the Public School Publishing Company:	
June to December, 1922.....	\$4,637.34
January to June, 1923.....	2,668.55 \$7,305.89
Interest on savings account, bonds, etc.:	
Interest on savings to Dec. 31, 1923	\$ 30.00
Interest on registered Liberty bond	42.50
Interest on other Liberty bonds	50.01
Interest on royalties	20.00
Interest on Dominion of Canada bond	55.00
Interest on Continental Gas & Electric bond	60.00
Interest on U. S. Treasury bond	21.13
Interest on Detroit-Edison bond	25.00 \$ 303.64
Securities received:	
Detroit-Edison 5% bond (Cost Value).....	940.00
Dues from Active and Associate Members.....	\$2,946.25
Total income for the year.....	<u>\$11,495.78</u>
Total receipts, including initial balance.....	\$22,133.19

EXPENDITURES FOR 1923

Publishing and Distributing <i>Yearbooks</i> :	
Reprinting 500 12th <i>Yearbook</i> , Part I.....	\$ 137.20
Reprinting 500 12th <i>Yearbook</i> , Part II.....	119.30
Reprinting 500 17th <i>Yearbook</i> , Part I.....	168.30
Reprinting 2000 18th <i>Yearbook</i> , Part II.....	300.30
Reprinting 500 19th <i>Yearbook</i> , Part I.....	213.70
Plates for 19th <i>Yearbook</i> , Part I.....	107.80
Reprinting 1000 20th <i>Yearbook</i> , Part I.....	302.20
Plates for 20th <i>Yearbook</i> , Part I.....	94.62
Reprinting 2000 20th <i>Yearbook</i> , Part I.....	453.75
Reprinting 2000 20th <i>Yearbook</i> , Part II.....	385.50
Reprinting 3500 21st <i>Yearbook</i>	752.50
Printing 4000 22nd <i>Yearbook</i> , Part I.....	1,275.04
Reprinting 1000 22nd <i>Yearbook</i> , Part I.....	228.80
Printing 5000 22nd <i>Yearbook</i> , Part II.....	2,572.20
Reprinting 3000 22nd <i>Yearbook</i> , Part II.....	939.40
Mailing 22nd <i>Yearbook</i>	431.20
Expense preparing 22nd <i>Yearbook</i> , Part II.....	45.60
Expenses Committee on 23rd <i>Yearbook</i> , Part I.....	377.09
Expenses in preparing 23rd <i>Yearbook</i> , Parts I and II	139.55
Premium on fire insurance (\$5000).....	13.75
Expense trip Bloomington, Illinois, editing.....	15.52
Total cost of <i>Yearbooks</i>	<u>\$ 9,073.32</u>

Secretary's Office:

Secretary's salary, one year, to end of Cleveland meeting	\$ 750.00
Expenses, representing Society on Council A. A. A. S., Boston meeting	60.18
Expenses, attending Cleveland meeting	71.92
Annual dinner of officers and speakers	64.50
Bookkeeping and clerical assistance	79.95
Stamps	83.00
Stationery	74.65
Telegrams	18.03
Supplies	8.79
Rent, safety deposit box	2.00
Total for Secretary's Office	\$ 1,213.02

Investments:

Detroit-Edison 5% bond (face value \$1000, plus accrued interest \$6.50)	\$ 946.50	\$ 946.50
Total expenditures for 1923	\$11,232.84	

SUMMARY

Total expenditures for 1923	\$11,232.84
Balance on hand, December 31, 1923:	
Savings account	\$1,030.00
Checking account	2,567.44
U. S. A. Treasury Certificates	800.00
Liberty bonds (Cost Value)	1,816.97
Dominion of Canada Bond (Cost Value)	979.75
Continental Gas & Electric Bond (Cost Value)	930.00
U. S. A. Treasury Bond	1,000.00
Detroit-Edison Bond (Cost Value)	940.00
Liberty Bond Interest Account	836.19
Total	\$10,900.35
	\$22,133.19

MEMBERSHIP, JANUARY 24, 1924

(Paid in Advance for 1924)

Honorary Members	3
Active Members	583
Associate Members	811

GUY M. WHIPPLE, *Secretary-Treasurer.*

HONORARY AND ACTIVE MEMBERS OF THE NATIONAL SOCIETY FOR THE STUDY OF EDUCATION

HONORARY MEMBERS

DeGarmo, Dr. Charles, Cocoanut Grove, Fla.
Dewey, John, Columbia Univ., New York City, N. Y.
Hanus, Paul H., Harvard Univ., Cambridge, Mass.

ACTIVE MEMBERS

Adams, Ray H., Supt. Schools, Dearborn, Michigan.
Aikin, Wilford M., Director John Burroughs School, Price Road and Clayton
Car Line, St. Louis Co., Mo.
Alexander, Carter, 525 W. 120th St., New York City, N. Y.
Alger, John L., Normal School, Providence, R. I.
Alleman, S. A., Supt. of Schools, Napoleonville, La.
Allen, Fiske, State Normal School, Charleston, Ill.
Allison, Samuel B., Dist. Supt. in charge of Special Schools, Board of Education, Chicago, Ill.
Almack, John C., Box 571, Stanford University, Calif.
Althaus, C. B., 16 So. Catharine, La Grange, Ill.
Angell, L. Gertrude, The Buffalo Seminary, Bidwell Pkwy., Buffalo, N. Y.
Anthony, Katherine M., State Normal School, Harrisonburg, Va.
Archer, C. P., Dept. of Education, State Teachers College, Moorhead, Minn.
Arnold, E. J., Supt. of Schools, Huntsville, Ohio.
Ashbaugh, Ernest J., Ass't Director, Bureau of Ed. Research, Ohio State
University, Columbus, Ohio.
Ashley, Myron L., 7113 Normal Blvd., Chicago, Ill.
Atwood, Abbie A., Prin. Douglas School, Janesville, Wis.
Avery, Geo. T., 845 Bryant St., Palo Alto, Calif.
Ayer, Fred C., Professor of Education, University of Washington, Seattle,
Wash.
Bacon, G. M., Buffalo Normal School, Buffalo, N. Y.
Bader, Edith M., Supervisor Elementary Schools, Ann Arbor, Mich.
Baker, H. J., 231 John R St., Detroit, Mich.
Baldwin, Prof. Bird T., Iowa Child Welfare Research Station, Iowa City, Iowa.
Ballou, Frank W., Supt. Schools, Washington, D. C.
Bamberger, Florence E., Johns Hopkins University, Baltimore, Md.
Barber, Fred H., Prof. of Psychology and Education, Emory & Henry College,
Box 247, Emory, Va.
Bardy, Joseph, 2114 N. Natrona St., Philadelphia, Pa.
Barnes, Harold, Supervisor Elementary Education, Girard College, Philadelphia, Pa.
Barnes, Percival Simpson, Supt. of Schools, East Hartford, Conn.
Barthelmess, Harriet M., Dept. of Psychology, N. J. State Normal School,
Trenton, N. J.
Baumgardner, Nina E., 501 W. 121 St., New York City, New York.
Bayles, E. E., Central Missouri State Teachers College, Warrensburg, Mo.

- Beaudry, Wilfred, Prin. George E. Stacy School, Milford, Mass.
Bedanes, Saul, Public School 173, Pennsylvania Ave., Brooklyn, N. Y.
Bedell, R. B., Supt. of Schools, Ashland, Neb.
Bednar, Christine, 132 West Marquette Road, Chicago, Ill.
Beeby, Daniel J., 7646 S. Green St., Chicago, Ill.
Bell, J. Carleton, 1032-A Sterling Place, Brooklyn, N. Y.
Bender, John F., Box 625, Pittsburg, Kansas.
Benedict, Ezra W., Greenwich, Washington County, N. Y.
Bennet, H. E., 5807 Blackstone Ave., Chicago, Ill.
Bennett, H. G., Pres. Southeastern State Teachers College, Durant, Okla.
Bennett, Mrs. V. B., Moorhead School, Pittsburgh, Pa.
Benson, C. E., New York University, Washington Square, New York City, N. Y.
Benson, J. R., Prin. Eliot School, 4242 Grove St., St. Louis, Mo.
Benton, G. W., 100 Washington Square, New York City, N. Y.
Bernard, Mrs. Francis F., (Educational Secretary) American Association of
University Women, 1634 I St., Washington, D. C.
Berry, Dr. Charles Scott, 1603 Grauger, Ann Arbor, Mich.
Berry, Frances M., Kindergarten-Primary Supervisor, Baltimore, Md.
Beveridge, J. H., 508 City Hall, Omaha, Neb.
Bick, Anna, Long School, 2842 A Victor St., St. Louis, Mo.
Bickford, C. W., Supt. of Schools, City Building, Lewiston, Me.
Bird, Dr. Grace E., Prof. of Educational Psychology, Rhode Island State Col-
lege, Providence, R. I.
Birdsong, Nellie W., State Normal School, Towson, Md.
Bolenius, Emma Miller, 46 S. Queen St., Lancaster, Pa.
Bolton, Frederick E., University of Washington, Seattle, Wash.
Booth, Grace E., 1808 Radnor Rd., Cleveland Hts., Ohio.
Boyden, Wallace C., Boston Normal School, Boston, Mass.
Boyer, Charles, Supt. of Schools, Atlantic City, N. J.
Bradford, Mrs. Mary D., 2603 Franklin St., Wilmington, Del.
Brady, Mary J., 3017 Lafayette Ave., St. Louis, Mo.
Bragg, Mabel C., Assistant Supt., Newtonville, Mass.
Breckenridge, Elizabeth G., Prin. Louisville Normal Sch., Louisville, Ky.
Breed, Frederick, 1224 East 57th St., Chicago, Ill.
Brewer, Anne T., The Hathaway-Brown School, 1945 E. Ninety-Seventh St.,
Cleveland, Ohio.
Brewer, John M., Bureau of Vocational Guidance, Harvard Univ., Cambridge,
Massachusetts.
Briggs, Thomas H., Teachers College, Columbia Univ., New York City, N. Y.
Bristow, W. H., Supervising Principal, Milford, Pa.
Brogue, Arthur, 5428 Kimbark, Chicago, Ill.
Brooks, Fowler D., The Johns Hopkins Univ., Baltimore, Md.
Brooks, John D., Co-ordinator for U. S. Veteran Bureau, Univ. of Pennsylvania,
Philadelphia, Pa.
Brown, Gilbert L., Marquette, Mich.
Brown, J. C., Pres. State Normal School, St. Cloud, Minn.
Brown, J. Stanley, President, State Normal School, DeKalb, Ill.
Brown, M. Ethel, Supt. Kindergarten, Primary Grades, 202 Parkwood Blvd.,
Schenectady, N. Y.
Brown, Stella E., County and City Supervisor, c/o Bd. of Educ., Frederick, Md.
Brueckner, Leo J., College of Education, Univ. of Minn., Minneapolis, Minn.
Buchanan, Wm. D., 5511 Vernon Ave., St. Louis, Mo.
Buckingham, B. R., Ohio State University, Columbus, Ohio.
Buckner, Chester A., School of Education, Univ. of Pittsburgh, Pittsburgh, Pa.

- Buckner, Edward F., Johns Hopkins Univ., Baltimore, Md.
Berkard, William E., 3202 W. Dauphin St., Philadelphia, Pa.
Burnham, Ernest, State Normal School, Kalamazoo, Mich.
Buswell, G. T., School of Education, Univ. of Chicago, Chicago, Ill.
Butler, L. A., 1128 Olivia Ave., Ann Arbor, Mich.
Butterworth, Julian E., Cornell Univ., Ithaca, N. Y.
Byrne, Lee, 222 North Dubuque St., Iowa City, Ia.
Cammack, I. I., Supt. of Schools, Kansas City, Mo.
Camp, Frederick S., Supervisor of Elementary Education, State Board of Education, Hartford, Conn.
Camp, H. L., Bureau of Educational Measurements, Univ. of North Dakota, Univ. Station, Grand Forks, N. Dak.
Capps, A. G., Univ. of Missouri, School of Education, Columbia, Mo.
Cavan, Jordan, Dept. of Education, Rockford College, Rockford, Ill.
Chace, S. Howard, 19 Thorndike St., Beverly, Mass.
Chadsey, Charles E., Univ. of Illinois, Urbana, Ill.
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